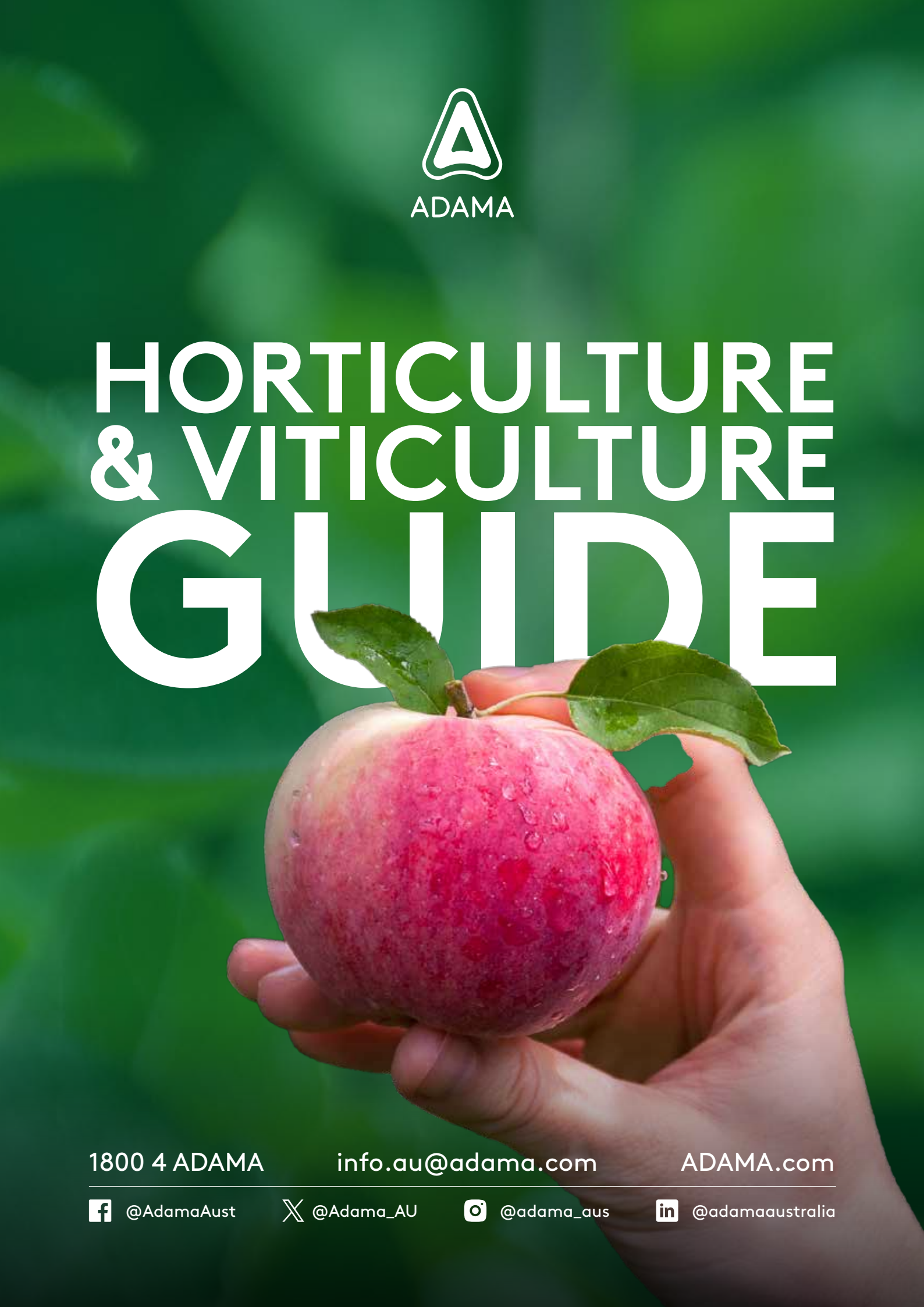
ADAMA

HORTICULTURE & VITICULTURE GUIDE



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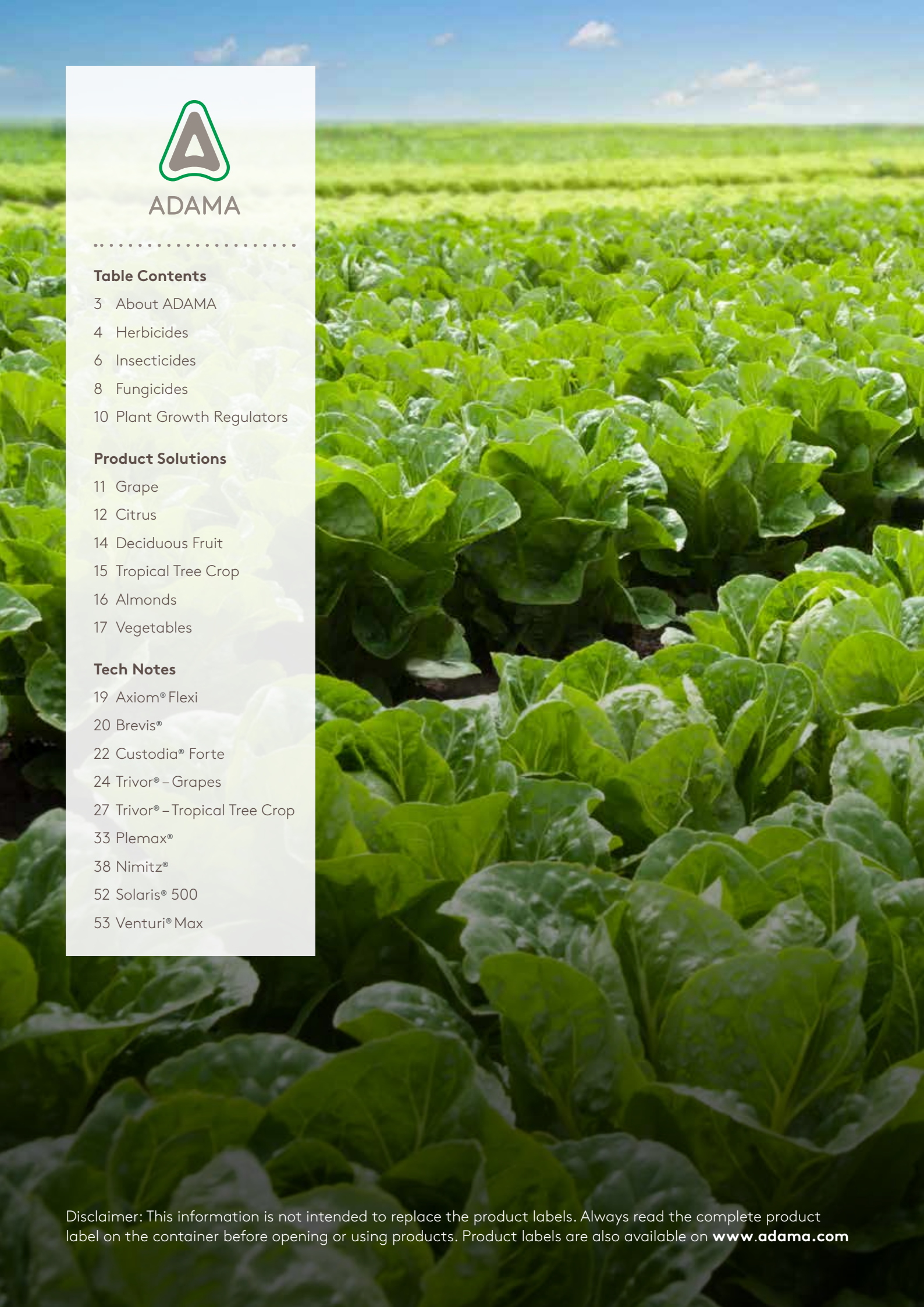

ADAMA

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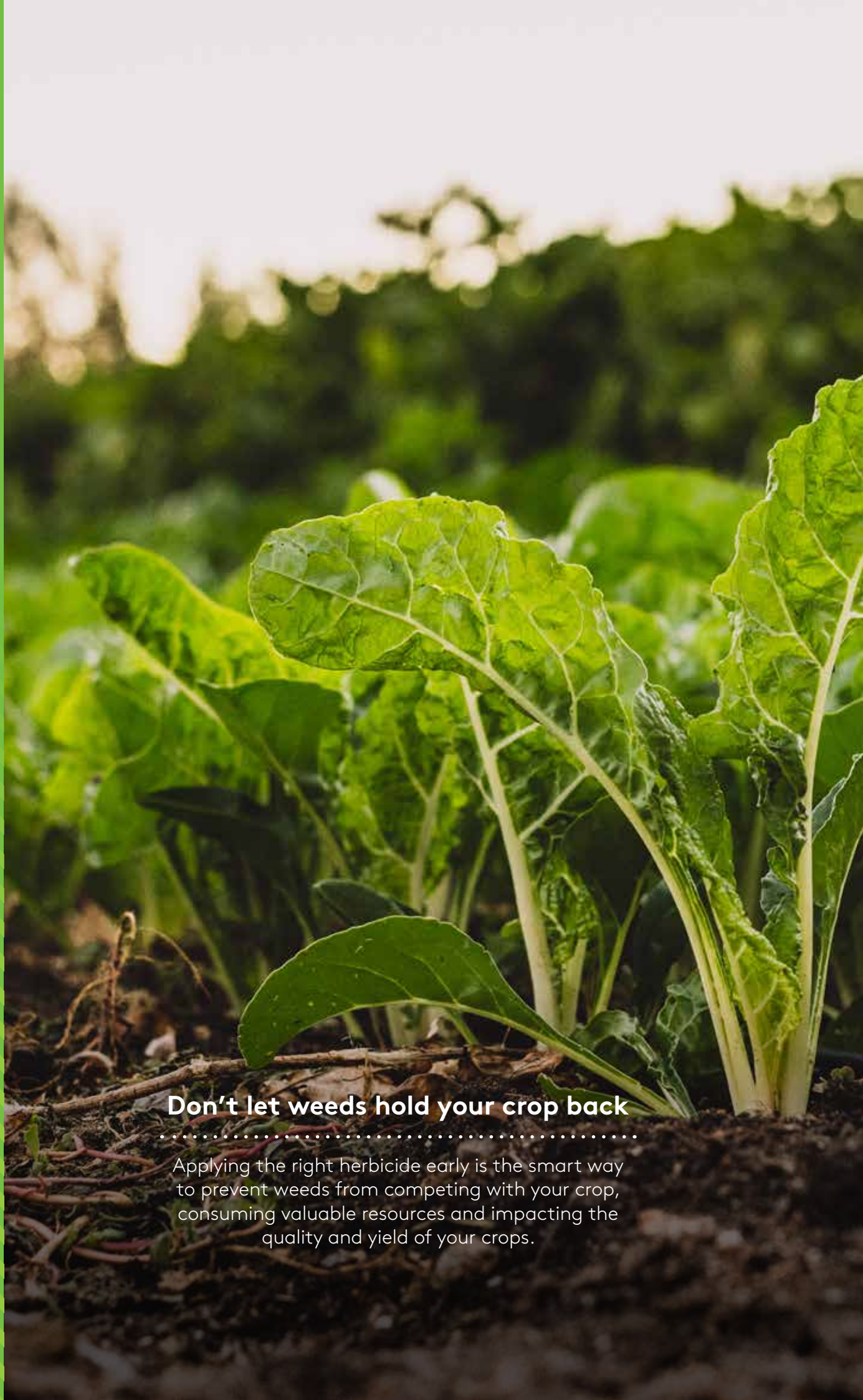
About ADAMA

ADAMA helps farmers combat weeds, insects, and diseases to do what they do best: feed and clothe the world.

We work with growers and local agricultural partners to gain invaluable insights and provide tailored solutions for their success. Our expanding range of superior crop protection solutions and exclusive formulations feature innovative brands derived from the industry's most extensive assortment of active ingredients. We are committed to ensuring availability, accelerating product development, and strengthening our local partnerships to provide the best customer experience.

At ADAMA, we're passionate about understanding and meeting the unique needs of local farmers and our customers.



Don’t let weeds hold your crop back

Applying the right herbicide early is the smart way to prevent weeds from competing with your crop, consuming valuable resources and impacting the quality and yield of your crops.

Herbicides

SEE MORE

PRODUCT	ACTIVE CONSTITUENTS	FORMULATION TYPE
AMETREX®	ametryn 800 g/kg	WG
BROADSTAR®	bentazone 480 g/L	SL
CAVALIER® 240	oxyfluorfen 240 g/L	EC
ELEVATE® 400 EC	carfentrazone 400 g/L	EC
FIREPOWER® 900	haloxyfop 900 g/L	EC
LEOPARD® 200	quizalofop-p-ethyl 200 g/L	EC
LINUREX®	linuron 450 g/L	SC
MATRIX® 500	ethofumesate 500 g/L	SC
PLATINUM® XTRA 360	clethodim 360 g/L	EC
SIERRA®	saflufenacil 160 g/L	SL
SIMANEX®	simazine 900 g/kg	WG
SPRAYTOP® 330	paraquat 330 g/L	SL
URAGAN®	bromacil 800 g/kg	WG

Overpower pest pressures

ADAMA offers growers a broad range of innovative and trusted insecticide solutions. They're developed to target the different stages of insect development to help you effectively treat pest populations as they emerge while providing options to prevent the development of resistance and minimise the impact on pollinators and beneficial insects.

Insecticides

SEE MORE

PRODUCT	ACTIVE CONSTITUENTS	FORMULATION TYPE
ALBATROSS®	fipronil 200 g/L	SC
APHIDEX® 800	pirimicarb 800 g/kg	WG
CORMORAN®	novaluron 100 g/L + acetamiprid 80 g/L	DC
DIMETHOATE®	dimethoate 400 g/L	EC
ELECTRA® 225	methomyl 225 g/L	SL
ELECTRA® 900	methomyl 900 g/L	SP
LASCAR®	pyriproxyfen 100 g/L	EC
MAVRIK®	tau-fluvalinate 240 g/L	SC
NIMITZ®	fluensulfone 480 g/L	EC
PRIMAL®	acetamiprid 200 g/L	SL
PLEMAX®	novaluron 80 g/L + indoxacarb 320 g/L (240 g/L s-indoxacarb)	SC
SORCERER® 36	abamectin 36 g/L	EC
TRIVOR®	acetamiprid 186 g/L + pyriproxyfen 124 g/L	DC
UPTOWN®	buprofezin 440 g/L	SC
VENTURI® MAX	methoxyfenozide 480 g/L	SC
VENOM® 240	bifenthrin 240 g/L	SC
WARLOCK®	emamectin 17 g/L	EC

Produce the best quality crop

The spread of crop diseases affects marketable yields and product quality. ADAMA offers a range of protectant and systemic fungicides to protect your crop throughout all growth stages.

Fungicides

SEE MORE

PRODUCT	ACTIVE CONSTITUENTS	FORMULATION TYPE
AXIOM® FLEXI	metalaxyl-m 800 g/L	SL
BUMPER® 625	propiconazole 625 g/L	EC
CAPTAN®	captan 800 g/kg	WG
CAVALRY® WEATHERGUARD	chlorothalonil 720 g/L	SC
CHIEF® AQUAFLO	iprodione 500 g/L	SC
CUSTODIA® FORTE	tebuconazole 370 g/L + azoxystrobin 222	SC
FOLPAN™ 800 WG*	folpet 800 g/kg	WG
HOWZAT®	carbendazim 500 g/L	SC
NIMROD®	bupirimate 250 g/L	EC
ORIUS®	tebuconazole 430 g/L	SC
SOLARIS®	cyprodinil 300 g/L	EC
SOLARIS® 500*	cyprodinil 500 g/L	SC
SOPRANO® 500	epoxiconazole 500 g/L	SC
SPHINX®	dimethomorph 500 g/L	SC

*Subject to APVMA approval

Visit ADAMA.COM for more information.

Maximising yields and quality

ADAMA offers unique thinning solutions for a range of horticultural crops as well as a ripening solution for table grapes, pineapples, sugarcane, stone fruit and tomatoes.

PRODUCT	ACTIVE CONSTITUENTS	FORMULATION TYPE
BREVIS® SG	metamitron 150 g/kg	SG
PROMOTE® PLUS 900	ethephon 900 g/L	SL

Grape Solutions

HERBICIDE	TARGET WEED	HRAC GROUP
CAVALIER® 240 (oxyfluorfen 240 g/L)	Knockdown and residual control of annual broadleaf and grass weeds	Group 14
ELEVATE® 400 EC (carfentrazone-ethyl 400 g/L)	Knockdown control of annual broadleaf and grass weeds	Group 14
FIREPOWER® 900 (haloxyfop 900 g/L)	Annual grass weeds	Group 1
SIMANEX® (simazine 900 g/kg)	Residual control of annual grass and broadleaf weeds	Group 5
SPRAYTOP® 330 (paraquat 330 g/L)	Knockdown of small emerged annual broadleaf and grass weeds	Group 22

INSECTICIDES	TARGET PEST	IRAC GROUP	APPLICATION
TRIVOR® (acetamiprid 186 g/L + pyriproxyfen 124 g/L)	Grapevine scale, Light brown apple moth, Mealybug	Group 4A + 7C	Export wine grapes: Use no later than E-L 19 Domestic wine grapes: Use no later than E-L 31 Table grapes: Use no later than E-L 25
UPTOWN® (buprofezin 440 g/L)	Grapevine scale (suppression only) and mealybug	Group 16	Use no later than 80% capfall
VENTURI® MAX (methoxyfenozide 480 g/L)	Light brown apple moth	Group 18	Use no later than 80% capfall
WARLOCK® (emamectin 17 g/L)	Grapevine moth & Light brown apple moth	Group 6	Use no later than E-L 31

FUNGICIDES	TARGET DISEASE	FRAC	APPLICATION
AXIOM® FLEXI (metalaxyl-m 800 g/L)	Downy mildew	Group 4	Refer to the label or AWRI
CAVALRY® WEATHERGUARD (chlorothalonil 720 g/L)	Black spot, Downy mildew	Group M5	Use no later than E-L 29
CUSTODIA® FORTE (tebuconazole 370 g/L + azoxystrobin 222 g/L)	Botrytis, Downy mildew, Powdery mildew	Group 3 + 11	Use no later than E-L 29
FOLPAN™ 800 WG* (Folpet 800 g/kg)	Powdery mildew, Downy mildew, Botrytis	Group M4	Refer to the label or AWRI
ORIUS® (tebuconazole 430 g/L)	Powdery mildew	Group 3	Use no later than E-L 29
SOLARIS® (cyprodinil 300 g/L)	Botrytis	Group 9	Use no later than E-L 29
SOLARIS® 500* (cyprodinil 500 g/L)	Botrytis	Group 9	Use no later than E-L 29
SPHINX® (dimethomorph 500 g/L)	Downy mildew	Group 40	Use no later than 80% capfall

PLANT GROWTH REGULATORS	SITUATION	APPLICATION
PROMOTE® PLUS 900 (ethephon 900 g/L)	Promote early uniform colouring in table grapes and assist in mechanical harvesting of Semillon wine grapes	Consult the product label for application instructions

*Subject to APVMA approval

Citrus Solutions

HERBICIDE	TARGET WEED	HRAC GROUP
CAVALIER® 240 (oxyfluorfen 240 g/L)	Knockdown and residual control of annual broadleaf and grass weeds	Group 14
ELEVATE® 400 EC (carfentrazone-ethyl 400 g/L)	Knockdown control of annual broadleaf and grass weeds	Group 14
FIREPOWER® 900 (haloxyfop 900 g/L)	Annual grass weeds	Group 1
SIERRA® (saflufenacil 160 g/L)	Knockdown control of annual broadleaf weeds	Group 14
SIMANEX® (simazine 900 g/kg)	Residual control of annual grass and broadleaf weeds	Group 5
SPRAYTOP® 330 (paraquat 330 g/L)	Knockdown of small emerged annual broadleaf and grass weeds	Group 22
URAGAN® (bromacil 800 g/kg)	Long residual control of annual grass and broadleaf weeds	Group 5

PLANT GROWTH REGULATORS	SITUATION	APPLICATION
PROMOTE® PLUS 900 (ethephon 900 g/L)	Thinning to increase fruit size, to reduce the size of a heavy crop and to even out the production cycle	Apply according to the label to Imperial mandarins, Navel, and Valencia oranges

Notes

Citrus Solutions

INSECTICIDES	TARGET PEST	IRAC GROUP	APPLICATION
ELECTRA® (methomyl 225 g/L)	Larger horned citrus bug, Bronze orange bug, budworms, Large citrus butterfly and Small citrus butterfly	Group 1A	Refer to the product label for application information
ELECTRA® 900 (methomyl 900 g/kg)	Larger horned citrus bug, Bronze orange bug, budworms, Large citrus butterfly and Small citrus butterfly	Group 1A	Refer to the product label for application information
DIMETHOATE (dimethoate 400 g/L)	Queensland fruit fly, Mediterranean fruit fly, Aphids, Thrips, Bronze orange bug, Wingless grasshopper	1B	Apply when pests appear. QLD, NSW, VIC: do not apply to Meyer lemons, Seville oranges or cumquats
LASCAR® (pyriproxyfen 100 g/L)	Red scale and Black scale	Group 7C	Apply at the time of crawler release up to 7 days before harvest
SORCERER® 36 (abamectin 36 g/L)	Brown citrus rust mite, Citrus rust mite, Broad mite, Queensland fruit fly	Group 6	Mites: apply only once per season Queensland fruit fly – refer to the product label
TRIVOR® (acetamiprid 186 g/L + pyriproxyfen 124 g/L)	Black scale, Citricola scale, Cottony cushion scale, Fruit spotting bug, Nigra scale, Pink wax scale, Pulvinaria scale, Red scale, Soft brown scale, Citrus mealybug, Light brown apple moth, Longtailed mealybug, Citrophilus mealybug, Citrus leaf miner, Kelly's citrus thrips, Mediterranean fruit fly and Queensland fruit fly	Group 4A + 7C	Scale and mealybug: apply post-flowering at the onset of crawler release Citrus leafminer: apply post-flowering and prior to the summer or autumn flush Lightbrown apple moth: apply from early post-flowering Kelly's citrus thrips: apply post-flowering Fruit spotting bug: apply post-flowering
UPTOWN® (buprofezin 440 g/L)	Red scale, White louse scale, Longtailed mealybug, Citrus mealybug, Citrophilus mealybug and Jassids	Group 16	Scales: apply when there is heavy crawler emergence Mealybug: apply when thresholds are exceeded in Spring-Summer
VENOM® 240 (bifenthrin 240 g/L)	Leaf eating weevil	Group 3A	Apply prior to or at the first sign of pest emergence
VENTURI® MAX (methoxyfenozide 480 g/L)	Light brown apple moth	Group 18	Apply when eggs and very small larvae are first seen in flower clusters

Deciduous Fruit Solutions

INSECTICIDES	TARGET PEST	CROPS	IRAC GROUP
ALPHA-SCUD® (alpha-cypermethrin 300 g/L)	Apple weevil, Garden weevil	Apples, Apricots, Nectarines, Peaches, Pears, Plums	Group 3A
APHIDEX® (pirimicarb 800 g/kg)	Wooly aphid, Green peach aphid, Black aphid, Cherry aphid	Apples, Stone fruit	Group 1A
CORMORAN® (novaluron 100 g/L + acetamiprid 80 g/L)	Apple dimpling bug, Codling moth, Light brown apple moth, Longtailed mealybug, Plague thrips, San Jose scale, Tuber mealybug, Wooly pod aphid (suppression), Black peach aphid, Green peach aphid, Mediterranean and Queensland fruit fly (suppression), Oriental fruit moth	Apples, Pears, Apricots, Cherries, Nectarines, Peaches, Plums	Group 15 + 4A
ELECTRA® 225 (methomyl 225 g/L)	Apple dimpling bug, Codling moth, Green peach aphid, Heliothis spp, Light brown apple moth, Monolepta beetle, Plague thrip	Apples, Pears, Stone fruit	1A
ELECTRA® 900 (methomyl 900 g/kg)	Apple dimpling bug, Codling moth, Green peach aphid, Heliothis spp, Light brown apple moth, Monolepta beetle, Plague thrip	Apples, Pears, Stone fruit	1A
MAVRIK® (tau-fluvalinate 240 g/L)	Apple dimpling bug, Plague thrips	Apples, Cherries, Nectarines, Peaches, Plums, Table Grapes	Group 3A
SORCERER® 36 (abamectin 36 g/L)	Two-spotted mite, European red mite	Apples, Pears	Group 6
UPTOWN® (buprofezin 440 g/L)	Longtailed mealybug, scale insects	Pears, Persimmons	Group 16
VENOM® 240 SC (bifenthrin 240 g/L)	Apple dimpling bug, Carpophilus beetles, Codling moth, Light brown apple moth, Longtailed mealybugs, Pear looper, Plague thrips, Two-spotted mite	Apples, Pears, Peaches, Nectarines, Plums and Apricots	Group 3A
VENTURI® MAX (methoxyfenozide 480 g/L)	Leaf roller, Light brown apple moth, Orange fruitborer, Yellow peach moth	Apples, Pears, Persimmons	Group 18

FUNGICIDES	TARGET DISEASE	CROPS	FRAC GROUP
BUMPER® 625 (propiconazole 625 g/L)	Brown rot, Blossom blight, Prune rust	Apricots (SA), Plums (NSW, SA, VIC, WA), Stone fruit	Group 3
CAPTAN® (captan 800 g/kg)	Black spot, Blossom blight, Brown rot	Apples, Pears, Stone fruit (except apricots),	Group M4
CAVALRY® WEATHERGUARD (chlorothalonil 720 g/L)	Brown rot, Blossom blight, Stone fruit rust, Shot-hole, freckle, Transit rust, Leaf curl	Apricots, Cherries, Nectarines, Peaches, Plums	Group M5
CHIEF® AQUAFLO (iprodione 500 g/L)	Orchard spraying: Blossom blight, Brown rot.Post-harvest dipping: Storage rots, Brown rot, Transit rot	Orchard spraying: Apricots, Cherries, Nectarines, Peaches, Plums. Post-harvest: Pome and Stone fruit	Group 2
NIMROD® (bupirimate 250 g/L)	Powdery mildew	Apples	Group 8
SOLARIS® 300 (cyprodinil 300 g/L)	Apple scab, Pear scab, Blossom blight, Brown rot	Apples, Apricots, Nectarins, Peaches, Pears, Plums	Group 9
SOLARIS® 500* (cyprodinil 500 g/L)	Apple scab, Pear scab, Blossom blight, Brown rot	Apples, Apricots, Nectarins, Peaches, Pears, Plums	Group 9

PLANT GROWTH REGULATORS	SITUATION	CROPS
BREVIS® (metamitron 150 g/kg)	Fruit thinning	Apples, Pears
PROMOTE® PLUS 900 (ethephon 900 g/L)	Advancement of maturity, and thinning (Apples)	Apples, Peaches, Cherries

*Subject to APVMA approval

Tropical Tree Crop Solutions

INSECTICIDES	TARGET PEST	CROPS	IRAC GROUP
DIMETHOATE® (dimethoate 400 g/L)	Queensland Fruit Fly	Avocado, Custard apple, Mango, Passionfruit, Papaya	Group 1B
SORCERER® 36 (abamectin 36 g/L)	Six spotted mite, Tea red spider mite	Avocado, Custard apple, Lychee, Paypaya, Passionfruit	Group 6
TRIVOR® (acetamiprid 186 g/L + pyriproxyfen 124 g/L)	Banana Spotting Bug, Citrus mealybug, Fruit Spotting Bug, Leafhoppers, Longtailed mealybug, Mango scale, Oleander Scale, Pink Wax Scale, Plant hoppers, Queensland Fruit Fly, Soft brown scale, Mediterranean Fruit Fly	Avocado, Custard apple, Lychee, Macadamia, Mango, Papaya, Passionfruit	Group 4A + 7C
UPTOWN® (buprofezin 440 g/L)	Mealybugs, Scale insects	Custard apple, Mango, Passionfruit	Group 16
VENTURI® MAX (methoxyfenozide 480 g/L)	Avocado Leafroller, Macadamia nut borer, Macadamia flower caterpillar	Avocado, Longan, Lychee, Macadamia	Group 18

FUNGICIDES	TARGET DISEASE	CROPS	FRAC GROUP
CUSTODIA® FORTE (tebuconazole 370 g/L + azoxystrobin 222 g/L)	Husk spot	Macadamia	Group 3 + 11
HOWZAT® (carbendazim 500 g/L)	Macadamia Husk Spot	Macadamia	Group 1

HERBICIDE	TARGET WEED	HRAC GROUP
CAVALIER® 240 (oxyfluorfen 240 g/L)	Knockdown and residual control of annual broadleaf and grass weeds	Group 14
ELEVATE® 400 EC (carfentrazone-ethyl 400 g/L)	Knockdown control of annual broadleaf and grass weeds in Tree Nuts	Group 14
FIREPOWER® 900 (haloxyfop 900 g/L)	Annual grass weeds in Tree Nuts	Group 1

PLANT GROWTH REGULATORS	SITUATION	CROPS
PROMOTE® PLUS 900 (ethephon 900 g/L)	Aid harvesting by promoting uniform nutfall	Macadamia

Almond Solutions

HERBICIDE	TARGET WEED	HRAC GROUP
CAVALIER® 240 (oxyfluorfen 240 g/L)	Knockdown and residual control of annual broadleaf and grass weeds	Group 14
ELEVATE® 400 EC (carfentrazone-ethyl 400 g/L)	Knockdown control of annual broadleaf and grass weeds	Group 14
SPRAYTOP® 330 (paraquat 330 g/L)	Knockdown of small emerged annual broadleaf and grass weeds	Group 22

INSECTICIDES	TARGET PEST	IRAC GROUP
APHIDEX® 800 (pirimicarb 800 g/kg)	Green peach aphid	Group 1A
SORCERER® 36 (abamectin 36 g/L)	Two spotted mite, Brown almond mite	Group 6
VENTURI® MAX (methoxyfenozide 480 g/L)	Carob Moth	Group 18

FUNGICIDES	DISEASE	FRAC GROUP
CAPTAN® 800 WG (captan 800 g/kg)	Anthracnose	Group M4
CAVALRY® WEATHERGUARD (chlorothalonil 720 g/L)	Shot hole, Stone fruit rust	Group M5
CUSTODIA® FORTE (tebuconazole 370 g/L + azoxystrobin 222 g/L)	Husk spot	Group 3 + 11
SOLARIS® 300 (cyprodinil 300 g/L)	Blossom blight/Brown rot, Rust, Shot hole	Group 9
SOLARIS® 500* (cyprodinil 500 g/L)	Blossom blight/Brown rot, Rust, Shot hole	Group 9

*Subject to APVMA approval

Notes

Vegetables & Other Crops

INSECTICIDES	TARGET PEST	CROPS	IRAC GROUP
ALPHA-SCUD® (alpha-cypermethrin 300 g/L)	Cabbage white butterfly, Cabbage moth, Cluster caterpillar, Cotton bollworm Garden weevil (WA only), Native budworm, Plague thrips, Tomato grub	Asparagus (except white), Brassica vegetables, Lettuce, Sweet corn, Tomatoes	Group 3A
APHIDEX® (pirimicarb 800 g/kg)	Aphids, including (Green peach, Cowpea, Cabbage, Cotton, Potato)	Artichoke, Asparagus, Beetroot, Beans, Brassica vegetables, Celeriac, Celery, Cucurbits, Capsicums, Chilli, Eggplant, Leafy vegetables, Leeks, Lettuce, Okra, Peas, Potatoes, Radishes, Shallots, Sweet corn, Tomatoes	Group 1A
DIMETHOATE® (dimethoate 400 g/L)	Aphids, Bean fly, Cucumber fly, Green vegetable bug, Jassids, Leaf hoppers, Leaf mining fly, Mediterranean fruit fly, Mites, Queensland fruit fly, Thrips, Wingless grasshopper	Asparagus, Beans, Beetroot, Capsicums, Eggplant, Melons, Onions, Peas, Potatoes, Rhubarb, Sweet Potatoes, Tomatoes, Turnip, Zucchini	Group 1B
ELECTRA® 225 (methomyl 225 g/L)	Armyworm, Bean fly, Bean pod borer, Bean thrip, Cluster, caterpillar, Cotton bollworm, Green vegetable bug, Loopers, Native budworm, Potato looper, Potato moth, Tomato leaf miner, Western flower thrips	Beans, Brassicas, Lettuce, Potatoes, Sweetcorn, Peppers, Tomatoes	Group 1A
ELECTRA® 900 (methomyl 900 g/kg)	Armyworm, Bean fly, Bean pod borer, Bean thrip, Cluster, caterpillar, Cotton bollworm, Green vegetable bug, Loopers, Native budworm, Potato looper, Potato moth, Tomato leaf miner, Western flower thrips	Beans, Brassicas, Lettuce, Potatoes, Sweetcorn, Peppers, Tomatoes	Group 1A
PLEMAX® (novaluron 80 g/L + indoxacarb 320 g/L (240 g/L s-indoxacarb)	Cabbage cluster caterpillar, Cabbage white butterfly, Centre grub, Cluster caterpillar, Cotton bollworm, Diamondback moth, Native budworm, Potato moth	Broccoli, Brussel Sprouts, Cabbage, Cauliflower, Eggplant, Leaf vegetables, Peppers, Tomatoes	Group 15 + 22A
SORCERER® 36 (abamectin 36 g/L)	Broad mite, Potato moth, Tomato potato psyllid, Tomato russet mite, Tomato red spider mite, Two spotted mite, Western flower thrip,	Cucumber, Eggplant, Leafy vegetables, Lettuce, Peppers, Rhubarb, Squash, Tomato, Zucchini,	Group 6
VENOM® 240 SC (bifenthrin 240 g/L)	Cucumber moth, Cotton bollworm, Native budworm, Silverleaf whitefly, Sweet potato weevil, Tomato russet mite, Two spotted mite, Wireworm, Whitefly	Cucurbits, Sweet potato, Tomatoes	Group 3A
VENTURI® MAX (methoxyfenozide 480 g/L)	Cluster Caterpillar, Native budworm, Tomato grub	Tomatoes, Peppers (Capsicums and Chilli), Eggplant, Okra	Group 18
WARLOCK® (emamectin 17 g/L)	Diamondback moth, Cabbage white butterfly, Heliothis (H. armigera, H. punctigera)	Brassica vegetables (Broccoli, Brussels sprouts, Cabbages, Cauliflower), Capsicum, Lettuce, Sweet corn, Tomatoes	Group 6

NEMATICIDE	CROPS	NEMATODES CONTROLLED
NIMITZ® (fluensulfone 480 g/L)	Capsicums, Carrots, Chilli, Cucurbits, Eggplant, Okra, Potatoes, Sweet potato, Tomatoes	Root-knot nematode

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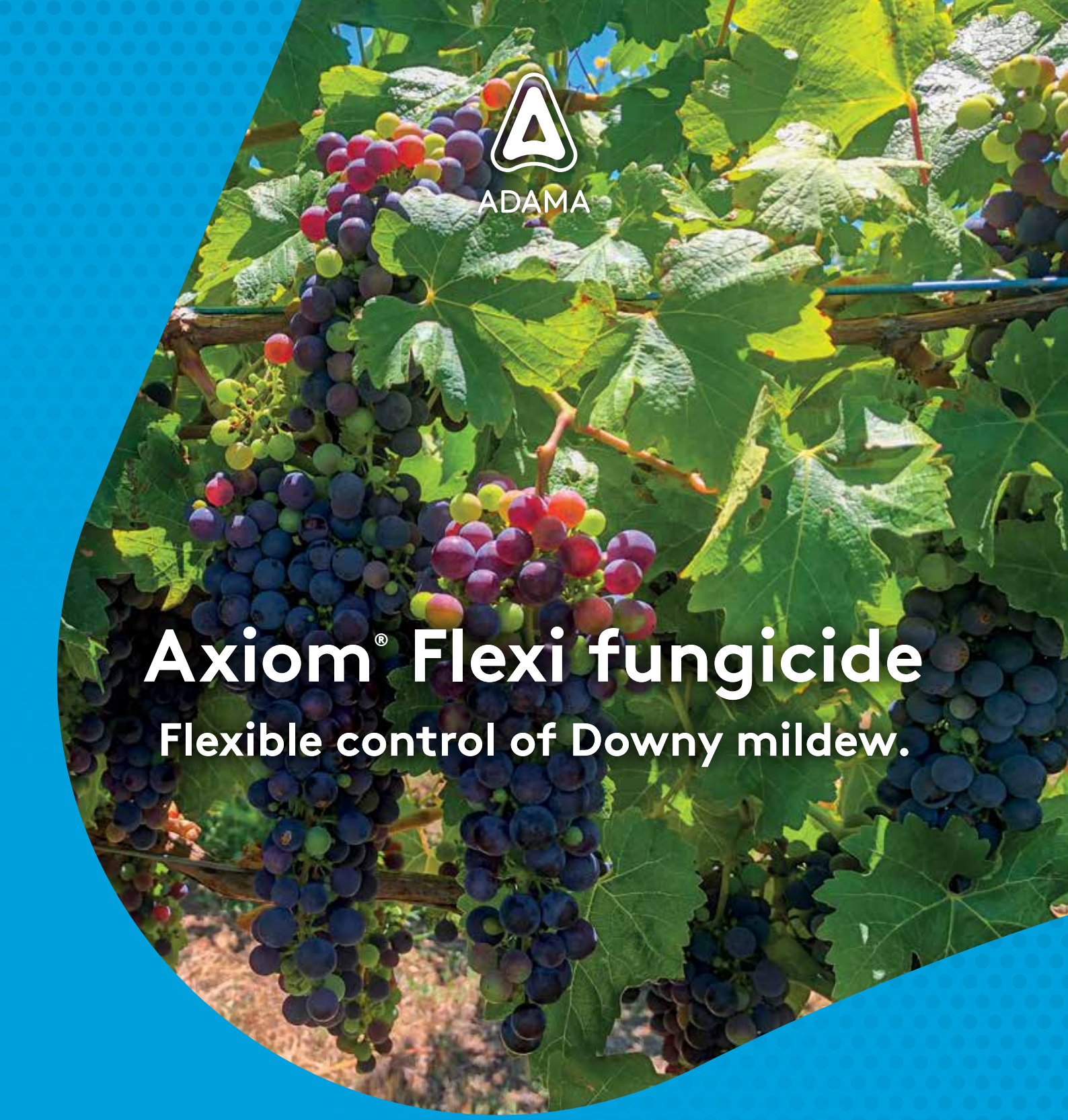
Vegetables & Other Crops

FUNGICIDES	CROPS	DISEASES	FRAC GROUP
CAVALRY® WEATHERGUARD (chlorothalonil 720 g/L)	Artichokes (Globe), Broad beans, Broccoli,Brussels Sprouts, Cabbage, Capsicums, Carrots, Cauliflowers, Celery, Cucurbits, Endive, Leeks, Onions (excluding Spring onions, Okra, Peas, Peppers, Potatoes, Radish, Rhubarbs, Shallots, Sweet Corn, Tomato, Watercress	Anthracnose, Ascochyta rot disease complex, Belly rot, Cercospora early blight Chocolate spot, Downy mildew, Grey mould, Late blight, Leaf blight, Purple blotch, Ring spot, Rust, Septoria leaf spot, Target leaf spot, Turcicum Leaf Blight	Group M5
NIMROD® (bupirimate 250 g/L)	Cucurbits, Peppers, Eggplant	Powdery mildew	Group 8

HERBICIDE	TARGET WEED	CROPS	HRAC GROUP
CAVALIER® 240 (oxyfluorfen 240 g/L)	Knockdown and residual control of annual broadleaf and grass weeds	Brassica crops, Cabbages, Cauliflower, Broccoli, Onions (seeded)	14
LEOPARD® 200 (quizalofop-p-ethyl 200 g/L)	Annual grass weeds	Beetroot, Cabbage, Carrots, Cauliflower, Cucumbers, Honey Dew, Melons, Onions, Peanuts, Pineapples, Potatoes, Pumpkins, Radish, Tomatoes	1
LINUREX® (linuron 450 g/L)	Control of various broadleaf weeds	Potatoes, Carrots, Parsnips, Coriander seed crops, Onions	5
MATRIX® 500 (ethofumesate 500 g/L)	Certain grass and broadleaf weeds	Beet crops (Beetroot, Fodder Beet, Mangolds, Sugar Beet), Onions	15
PLATINUM® XTRA 360 (clethodim 360 g/L)	Annual grass weeds	Beetroot, Cabbage, Celery, Lettuce, Onions, Potatoes, Peanuts	1
SIMANEX® (simazine 900 g/kg)	Residual control of annual grass and broadleaf weeds	Asparagus, Berry Fruits, Strawberries	5
URAGAN® (bromacil 800 g/kg)	Certain grass and broadleaf weeds	Asparagus, Pineapples	5

PLANT GROWTH REGULATORS	SITUATION	CROPS
PROMOTE® PLUS 900 (ethephon 900 g/L)	Fruit ripening	Pineapples, Tomatoes



ADAMA

Axiom® Flexi fungicide

Flexible control of Downy mildew.

Axiom Flexi is the flexible tank-mix partner for many commonly-used protectant fungicides to control Downy mildew in grapes.

- Cost-effective control of Downy mildew
- Ideal tank-mix option with mancozeb, copper or chlorothalonil
- Contains 800 g/L metalaxyl-M in a soluble concentrate formulation
- Apply from pre-flowering through to 80% capfall
- Concentrated formulation for greater convenience and reduced waste

Scan here for more information

FUNGICIDE

ADAMA.COM

Widens your application window for fruit thinning.

Product overview

Brevis® provides apple and pear growers with an innovative and more flexible option for fruit thinning. Compared with currently-available fruit thinners, Brevis can be applied across a wider growth interval (8–16 mm central fruitlet diameter), a wider temperature range (10–25°C) and up to two applications at a rate of 1.1 to 2.2 kg/ha (up to a maximum of 4.4 kg/ha per season).

Unique mode of action

Brevis contains the unique active ingredient, metamitron, which temporarily inhibits photosynthesis to induce fruit thinning. Applied as a foliar spray, metamitron is absorbed primarily by leaves but does not translocate throughout the tree. The rate of photosynthesis starts to decline within one hour after an application of Brevis and reaches its lowest point within three to five days. Excess fruitlets stop growing and pedicel discolouration can be observed as early as five days after application. The weakest fruitlets within a cluster, i.e. fruitlets with low growth rates or those without seeds; will usually drop first. Fruit drop will continue for several weeks. Depending on application rate, timing and environmental conditions, the rate of photosynthesis returns to normal levels within two to three weeks.

Cultivar responses

Brevis has been extensively tested on a wide range of apple and pear cultivars both locally and globally. While Brevis is able to induce thinning in most cultivars, the degree of thinning effect of Brevis can vary by cultivar. Please refer to the label at www.adama.com for a list of cultivars with a confirmed thinning response to Brevis in local and overseas field testing and/or commercial trials. For cultivar specific advice please contact your ADAMA Australia representative.

At a glance

Unique mode of action	Brevis contains the unique active ingredient, metamitron, which inhibits photosynthesis to induce fruit thinning.
Greater flexibility	Brevis provides greater flexibility during fruit thinning: • Effective over a wide temperature range (10°C to 25°C) • Wider application window (8 to 16 mm fruitlet diameter) • Apply up to two applications at a rate of 1.1 to 2.2 kg/ha (up to a maximum of 4.4 kg/ha per season)
Proven efficacy	Tested in more than 50 trials in Australia over eight years.
Rainfast	Rainfast within two hours of application.
Re-entry	Orchard workers can re-enter the orchard once the spray has dried.
Compatible with IPM programs	No impact on beneficial insects and is compatible with IPM programs.
Nil withholding periods	Brevis has no withholding period or export restrictions when used in accordance with label directions.
Cultivar response	Local trial work has confirmed thinning responses to Brevis in Fuji, Granny Smith, Pink Lady, Red Delicious, Royal Gala and Ruben apple cultivars. Local trial work has also confirmed fruit thinning responses to Brevis in Packham pears under Australian conditions.

Brevis®

Spray program

Apply Brevis at 1.1 to 2.2 kg/ha when conditions are suitable from the start of the use window. The rate used will depend on the amount of fruit thinning required. This will be influenced by fruit set and previous history of small fruit and biennial bearing.

Use the lower rate to thin fewer fruitlets, particularly on easy to thin cultivars and where strong thinning responses to Brevis have been previously observed.

Use the higher rate to increase thinning, where there is high fruit set, on harder to thin cultivars and/or when applying later in the Brevis application window.

A second application of Brevis at 1.1 to 2.2 kg/ha may be required where there is high fruit set, particularly on harder to thin cultivars and where the photosynthesis rate is high and favouring greater fruitlet retention. There must be a minimum interval of 5 days between Brevis applications.

DO NOT apply more than 4.4 kg/ha of Brevis per season.

Application timing

Application timing is critical to optimise efficacy. Brevis should be applied when the central (king) fruitlets are 8–16 mm in diameter. When applying Brevis as either a single timing or split application, DO NOT apply later than the 16 mm diameter stage.

Application conditions

The efficacy of Brevis is directly related to day/night temperatures before and after application. Apply when daily temperatures are between 10°C and 25°C. Cloudy weather (lower light intensity) and warmer night temperatures >10°C can increase thinning the week prior to and post application. Always check current and forecast weather conditions before application. Postpone application if temperatures are outside the recommended range or trees are under stress due to cloud cover, heat, frost, drought or hail damage. Consider reducing the application rate and/or the need for a second application. DO NOT apply within five days of a frost or if frost is expected.

Refer to the BreviSmart® model available from ADAMA for the best window to apply Brevis. More information on how to access the BreviSmart decision support tool can be obtained from contacting your ADAMA representative.

Spray application

Apply in a spray volume to achieve good coverage. DO NOT apply past the point of run-off. Brevis has a thinning effect only on the treated parts of the trees and should only be applied to the parts of the crop canopy that require thinning. Application should be made using appropriate spray equipment and sufficient water to provide adequate penetration and coverage. Equipment setting and water volume may need to vary, depending on the tree height and canopy. Take care not to overlap sprays during application. DO NOT apply oil-based products within 7 days before or after application of Brevis.

Other fruit thinners

Brevis can be applied as part of a program in a sequence with other thinners. If applying primary thinners, assess the effectiveness of these applications and additional fruit thinning requirements before deciding on the application rate/number of Brevis applications.

Rainfastness

Brevis is rapidly absorbed and is rainfast within two hours of application.

Withholding periods

Harvest: Not required when used as directed.

Grazing: DO NOT allow livestock to graze inter rows in treated orchards.

Scan here for more information

ADAMA

Custodia® Forte

Fungicide

Product overview

Custodia® Forte fungicide provides protectant and systemic activity against the key diseases in almonds, grapes and macadamias. Custodia Forte is a concentrated suspension concentrate formulation that combines two different modes of action (Group 3 + 11) for robust disease control and resistance management.

Key features

- Preventative control or suppression of key diseases protecting growers yield potential and quality
- Two modes of action for improved disease control and resistance management
- Excellent protectant and systemic activity, suitable to use in IPM programs
- Suspension concentrate formulation with low odour
- Highly compatible formulation for tank mixing

Application rate conversion

Custodia Forte is a concentrated formulation containing 85% more active ingredient than Custodia, reducing on-farm packaging and waste.

Custodia (200 g/L tebuconazole + 120 g/L azoxystrobin)	**Custodia Forte** (370 g/L tebuconazole + 222 g/L azoxystrobin)
Dilute rate (mL/100 L water)	
60	32
100	54

Product information

Active ingredient:
Azoxystrobin 222 g/L + Tebuconazole 370 g/L

Mode of action:
Group 3 + 11

Formulation:
Suspension Concentrate

Registered crops:
Almonds, macadamias, grapes

Target diseases:
Brown rot/Blossom blight, Shot-hole, Rust, Hull rot, Powdery mildew, Downy mildew, Botrytis bunch rot, Husk spot

Re-entry period:
Once the spray has dried

Custodia® Forte

Crop	Target disease	Application rate	Timing	Spray frequency
Almonds	Brown Rot/Blossom blight and Shot-hole	32 mL/100 L or 540 mL/ha	From early (10%) bloom before early hull split	Apply in rotation with fungicides from alternative modes of action on a 7 to 14-day interval targeting key growth stages including full bloom, petal fall and shuck fall After shuck fall, apply Cavalry® Weatherguard for Shot-hole control on a 14-day spray interval Do not apply consecutive applications and no more than three sprays per season
	Rust		Commence spray program from late flowering and/or when first new leaves emerge	Apply up to two applications per season in rotation with fungicides from a different mode of action group on a 14-day spray interval
	Hull rot (suppression only)		Early hull split	Apply a single application. If a second fungicide application is required, rotate with an alternative registered fungicide after a 10 to 14-day interval
Grapes	Powdery Mildew	35 mL/100 L	Before E-L 19 (before flowering) and under low disease pressure up to E-L 29	Maximum two applications per season. Always apply as a preventative spray and never as a curative spray
		54 mL/100 L or 540 mL/ha	From after E-L 19 (start of flowering) and under high disease pressure up to E-L 29	
	Downy Mildew		Seasonal preventative spray program commencing when shoots are 20 cm long, up to E-L 29	Apply in rotation with fungicides from other modes of action on a 7 to 21-day spray interval. Under high disease pressure and during flowering, apply in rotation with Axiom® Plus
	Botrytis Bunch Rot (low disease pressure only)		Use no later than E-L 29	If three or fewer Botrytis sprays are applied in a season, use no more than one Custodia Forte spray during the season If four or more Botrytis sprays are to be applied in a season, up to two Custodia Forte sprays can be applied
Macadamia	Husk spot	32 mL/100 L*	From match head timing	Two applications per season on a 14 to 28-day spray interval dependent on disease pressure, with fungicides from other modes of action groups.

**Applications of Custodia Forte with Hasten* as per label guidelines can improve husk spot control under conditions of high disease pressure. However, we advise growers to evaluate this mix in a small area before commercial use*

Harvest Withholding Period

Almonds: Not required when used as directed

Grapevines: Do not harvest for 4 weeks after application

Macadamias: Do not harvest for 15 days after application

Scan here for more information

ADAMA

Trivor®

Beauty that's more than skin deep.

Trivor sets the benchmark for the management of key insect pests in citrus, including scales, mealybugs, Light brown apple moth, Kelly's citrus thrips & fruit flies*

- Protects fruit quality and marketable yield from damage
- Rapid knockdown control and extended residual protection
- Two modes of action (Group 4A/7C) for superior efficacy and resistance management
- Highly compatible with other insecticides and fungicides
- An ideal rotation partner for existing chemistry

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INSECTICIDE

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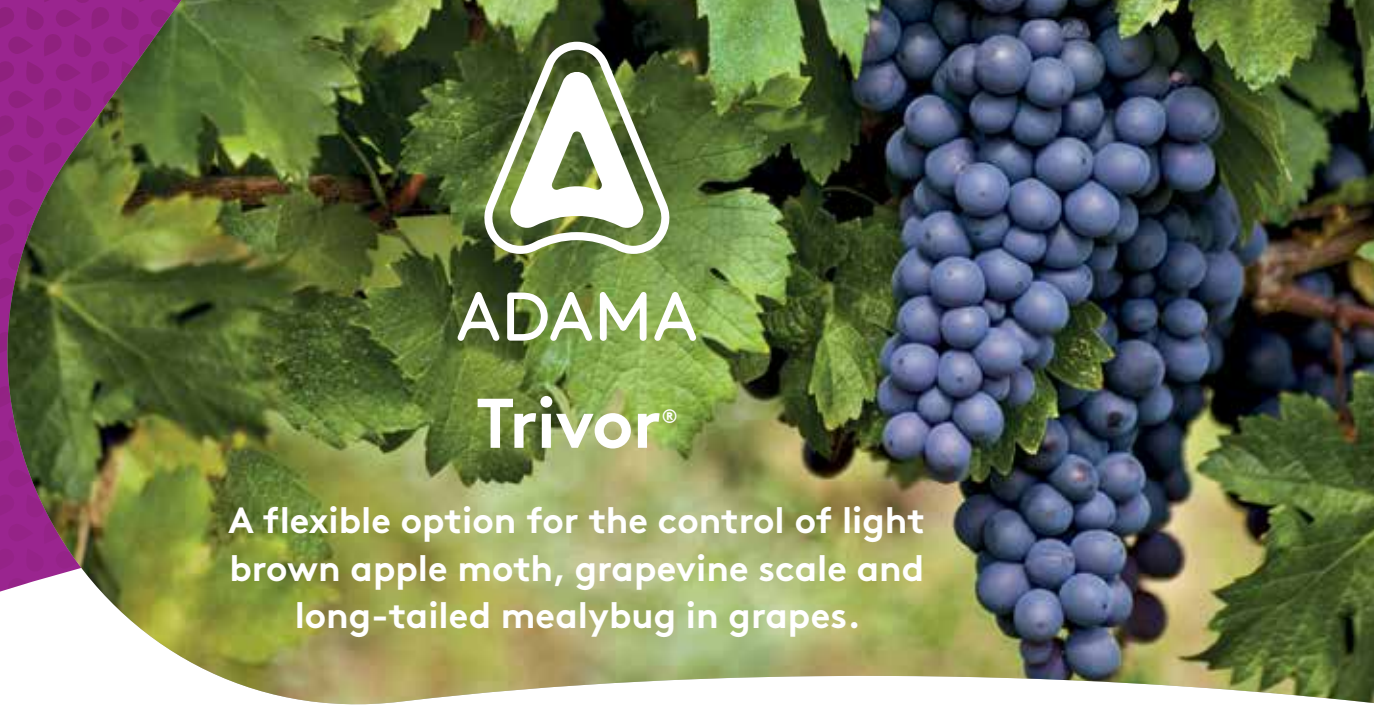
*Refer to registered label. ®Registered trademarks of an ADAMA Agricultural Solutions Company. ADA21342



ADAMA

Trivor®

A flexible option for the control of light brown apple moth, grapevine scale and long-tailed mealybug in grapes.

Grapevine scale and long-tailed mealybug
(400-800 mL/ha)

Apply Trivor when crop monitoring indicates the onset of crawler release from overwintering adults. For best results, target Trivor on the first generation of active crawlers following budburst when good coverage can be achieved. Do not target Trivor applications on populations that are well-established where mature adult insects dominate the population. Apply Trivor as a dilute (high volume) spray to the point of run-off, ensuring thorough coverage. Concentrate spraying is not recommended when targeting grapevine scale and/or mealybug as thorough coverage is critical for control. Continue to monitor crops and if additional treatments are required, apply an insecticide from a different mode of action group after a minimum spray interval of 21 days.

Light brown apple moth
(400-800 mL/ha)

Apply as part of a monitoring and management program commencing 140 degree-days after light brown apple moth is detected in traps. Trivor should be applied as a dilute (high volume) spray to point of run-off to target pre-flowering infestations. If concentrate spraying, ensure suitable equipment is used to achieve coverage of foliage and developing bunches. Following Trivor application, continue to monitor crops for light brown apple moth and apply additional insecticide applications on a 7–14 day spray interval from flowering through to bunch closure. Rotate to another mode of action, such as Group 6 (Oracle®) or Group 18 (Venturi® MAX), according to label directions.

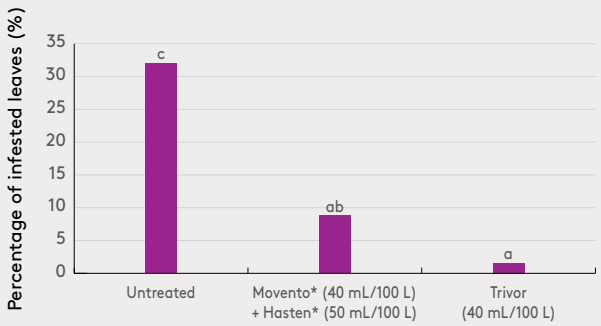


Figure 1: Incidence of grapevine scale on leaves (21 DAA). (Trial ID: AD-AU-18-I12-8, Nangiloc, Victoria, 2018/19. Grapes, cv. Riesling. DAA = Days after application.)

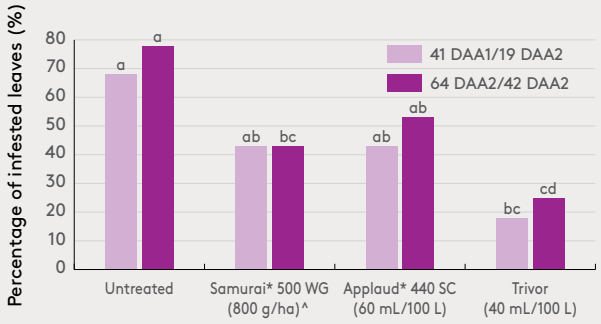


Figure 2: Incidence of long-tailed mealybug on leaves. (Trial ID: AD-AU-15-I02-03, Bream Creek, Tasmania, 2015. Grapes, cv. Riesling. DAA = Days after application. ^Applied as soil drench @ 500 L water/ha.)

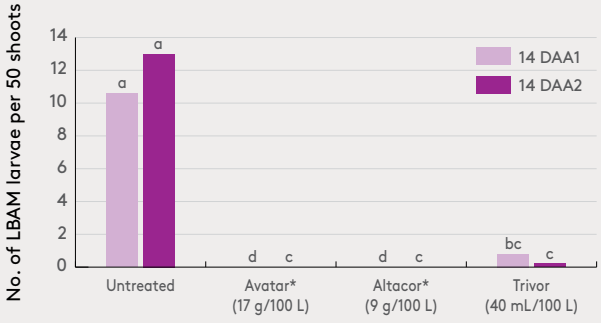


Figure 3: Incidence of light brown apple moth in shoots. (Trial ID: AD-AU-16-I01-05, Yering, Victoria, 2015/16. Grapes, cv. Chardonnay. DAA = Days after application. *Agral adjuvant.)

Trivor®

Mixing

Trivor is a dispersible concentrate (DC) formulation. It is added to the spray tank after any water dispersible granular (WG) or suspension concentrate (SC) formulations and before any emulsifiable concentrate (EC) or soluble liquid concentrate (SL) formulations.

Application window

Trivor can be applied up to E-L 19 for export wine production and E-L 31 for domestic wine production. For table grape production Trivor can be applied up to E-L 25. Apply a maximum of two applications of Trivor per season and in rotation with an insecticide from a different mode of action group.

Compatibility

Trivor is compatible with the following crop protection products and fertilisers:

Biopest* Oil
Chief® Aquaflo
Copper Oxychloride
Champ 500 WG Fungicide
Emissary®
Folpan™ 800
Tri-Base Blue Fungicide
Mancozeb
Custodia® Forte
Solaris®
Solaris® 500
YaraVita Twin Zinc*
YaraVita Mantrac Pro*
YaraVita Coptrel 500*
Spraygro* Smart Trace Zinc

Spray volume

Apply as a dilute (high volume) spray to the point of run-off, ensuring thorough coverage. Thorough coverage is required for control. Do not use concentrate spraying when targeting mealybug and scale. Dilute or concentrate spraying can be used when targeting LBAM, provided coverage is suffcient.

At a glance

- ✓ **Flexible option for the control of key insect pests in wine and table grapes, including light brown apple moth, grapevine scale and long tailed mealybug.**
- ✓ **Combines two insecticide modes of action to provide knockdown plus residual control and good resistance management.**
- ✓ **Highly compatible dispersible concentrate formulation with excellent crop safety.**
- ✓ **No additional adjuvants required.**
- ✓ **Locally-developed to meet the needs of Australian grape growers and Australian conditions.**

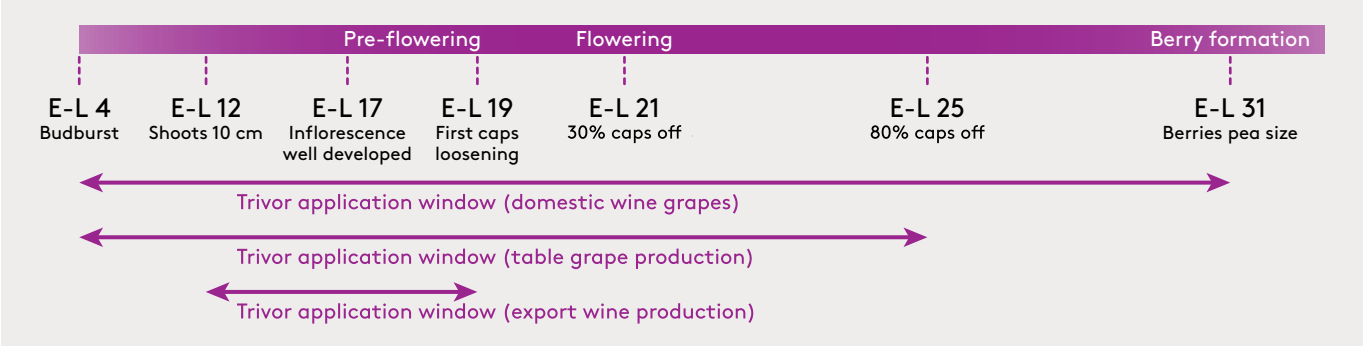
Withholding periods

Wine and table grapes: Not required when used as directed.

Grazing: DO NOT graze or cut treated area for stockfood.

Export trade advice

Fruit or wine destined for export may require extra time between application and harvest to be accepted in some export markets. Before using Trivor on crops destined for export, consult your exporter, AWRI Dog Book or ADAMA to ensure that an appropriate MRL is in place in the importing country.



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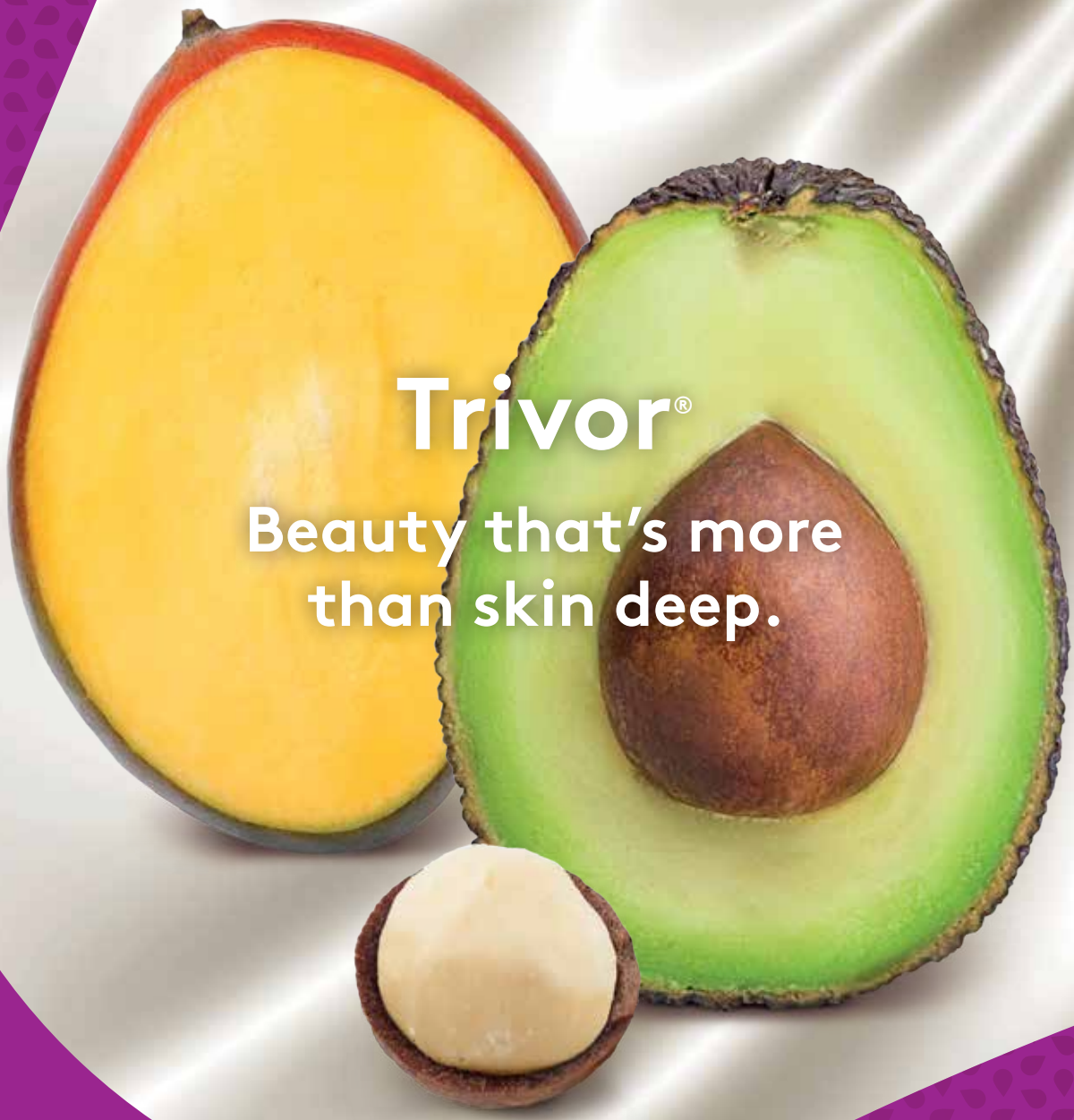

Trivor®

Beauty that's more than skin deep.

Avocado, Mango and Macadamia

Product Guide

INSECTICIDE

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Trivor is a proven and trusted option for knockdown and residual control of key pests of avocados, macadamias and mangoes.

Key points

- Flexible option for knockdown and residual control of key stinging and sucking insects in avocados, macadamias and mangoes.
- Combines two insecticide modes of action to provide good resistance management.
- No additional adjuvants required.
- Highly compatible dispersible concentrate formulation with excellent crop safety.
- Locally-developed under Australian conditions to meet the needs of Australian avocado, macadamia and mango growers.

Overview

Fruit/Banana spotting bugs, scales, mealybugs and fruit flies can significantly market yield and market acceptance of avocados, macadamias and mangoes. Trivor is a unique insecticide delivering two active ingredients for control of a range of key pests, as well as allowing growers and their advisors to implement an effective resistance management strategy. Trivor combines two highly effective active ingredients from the Group 4a (acetamiprid) and 7c (pyriproxyfen) insecticide groups. This provides ideal foundation for resistance management strategies, both within the same crop season and from year to year. Trivor is also registered for the control of a wide range of insect pests in citrus and grapes.

Knockdown and residual control

Trivor provides rapid knockdown and residual control of key insect pests of tropical and subtropical tree crops. Trivor provides robust efficacy of target pests and protects marketable yield.

Beneficial insect impacts

Trivor has only a minimal and short-term impact on beneficial insects and is significantly less disruptive to beneficial insects than older broad-spectrum insecticides. Do not spray during flowering or when bees are actively foraging. Applied early in the season, it controls pest populations whilst allowing beneficial species to become established.

Excellent compatibility

Trivor has excellent physical and biological compatibility with a range of other insecticides and fungicides for one-pass insect and disease control. Trivor does not require the addition of an adjuvant to achieve maximum efficacy, providing maximum flexibility when implementing fungicide rotation programs.

Developed for use in Australia

ADAMA is one of the world's leading crop protection companies. Trivor was developed by ADAMA to meet the needs of Australian citrus, grape, avocado, macadamia and mango growers. Commercial development is continuing throughout the world, including Asia, Middle-East, North America, Africa and South America. ADAMA is committed to developing simple, practical and innovative solutions that make the complex job of farming easier.

Use and target pests

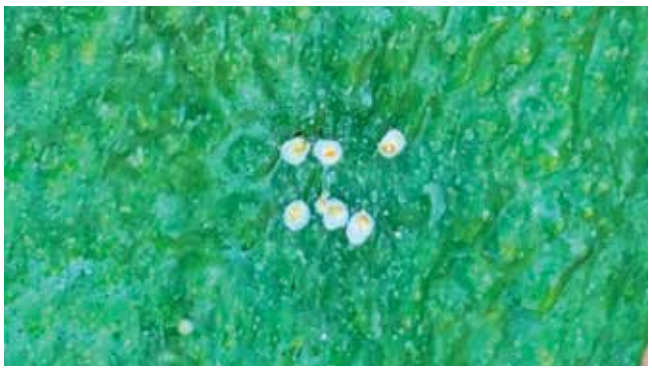
Adult female fruit spotting bug (Photo: Alana Govender).

Fruit/banana spotting bugs
(*Amblypelta nitida, A. lutescens lutescens*)

Apply up to two applications of Trivor per season in avocados and up to three applications of Trivor per season in macadamias and mangoes as part of a monitoring and spray program. Trivor should be applied post-flowering when monitoring indicates spotting bugs are becoming active in the crop. Use the higher rate if high pressure is expected or for longer residual control. Alternate each application of Trivor with a registered insecticide from a different mode of action group on a minimum 14-day spray interval.

Pink wax scale
(*Ceroplastes rubens*)

Apply up to two applications of Trivor per season as part of a monitoring and spray program. Apply Trivor post-flowering when crop monitoring indicates the onset of crawler release. Use the higher rate if heavy scale pressure is expected or for longer residual control. Do not target Trivor applications on well-established populations with high levels of mature adult insects. Continue monitoring crops after application and if required, apply a second application of Trivor after a minimum interval of 21 days.



Oleander scale
(*Aspidiotus nerii*)

Apply up to two applications of Trivor per season as part of a monitoring and spray program. Apply Trivor post-flowering when monitoring indicates the onset of crawler release. Use the higher rate if heavy scale pressure is expected or for longer residual control. Do not target Trivor applications on well-established populations with high levels of mature adult insects. Continue monitoring crops after application and if required, apply a second application of Trivor after a minimum interval of 21 days.

Mango scale
(*Aulacaspis tubercularis*)

Apply up to two applications of Trivor post-flowering and when crop monitoring indicates the onset of crawler release. Do not target Trivor applications on well-established populations with high levels of mature adult insects. Continue monitoring crops after application. If additional treatments are required, apply a registered insecticide with an alternative mode of action after a minimum 21-day spray interval before applying a second application of Trivor.

ADAMA

Directions for use

Crop	Pest	Rate	Critical comments
Avocados	Fruit spotting bug (*Amblypelta nitida, A.lutescens lutescens*)	20–40 mL/100 L	Should be applied post-flowering. Use a minimum of 400 mL/ha and do not apply more than 800 mL/ha per application. Do not apply more than 2 applications per season to avocados and no more than 3 applications to macadamias and mangoes. Do not apply more than 1.6 L/ha per season.
Macadamias		20 mL/100 L	
Mangoes			
Avocados	Pink wax scale (*Ceroplastes rubens*)	40 mL/100 L	Apply up to two applications per season post-flowering when crop monitoring indicates the onset of crawler release. Use a minimum of 400 mL/ha but not more than 800 mL/ha per application. Do not exceed more than 1.6 L/ha per season.
Macadamias			
Mangoes			
Avocado	Oleander scale (*Aspidiotus nerii*)	20–40 mL/100 L	
Macadamias	Soft brown scale (*Coccus hesperidum*) Citrus mealybug (*Planococcus citri*) Long tailed mealybug (*Pseudococcus longispinus*)	40 mL/100 L	
Mangoes	Mango scale (*Aulacaspis tubercularis*)		
Avocados	Mediterranean fruit fly (*Ceratitis capitata*) Suppression only Queensland fruit fly (*Bactrocera tryoni*) Suppression only		Apply up to two applications per season. Use a minimum of 400 mL/ha but not more than 800 mL/ha per application. Apply Trivor® in rotation with insecticides from a different mode of action using a 7 day spray interval.
Macadamias			
Mangoes			

Withholding periods

Avocados, Mangoes

DO NOT HARVEST FOR 28 DAYS AFTER APPLICATION

Macadamias

DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION

Grazing

DO NOT GRAZE OR CUT TREATED AREA FOR STOCKFOOD.

Efficacy data

Avocados

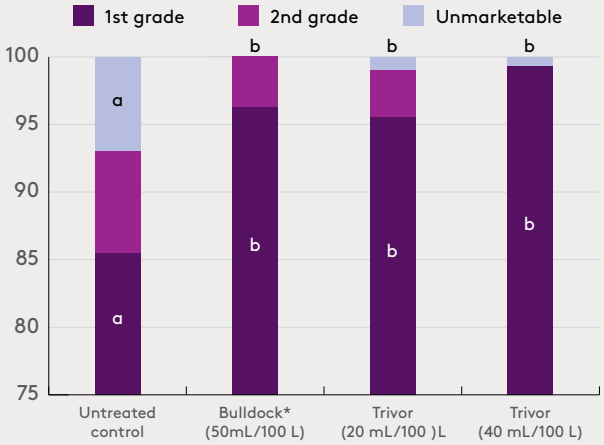


Figure 1: Percentage of avocados damaged at harvest by fruit/banana spotting bug.

(Childers, Qld, 2016, var. Hass, Trial ID: ADA14375#8)

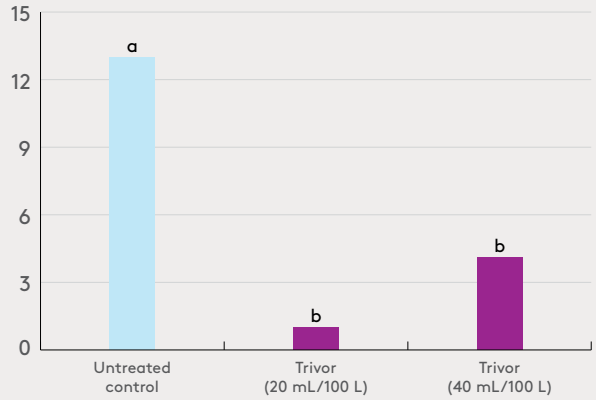


Figure 2: Percentage of avocados infested with oleander scale (23DAA2).

(Ravensbourne, Qld, 2016, Trial ID: ADA14375#5)

Macadamias

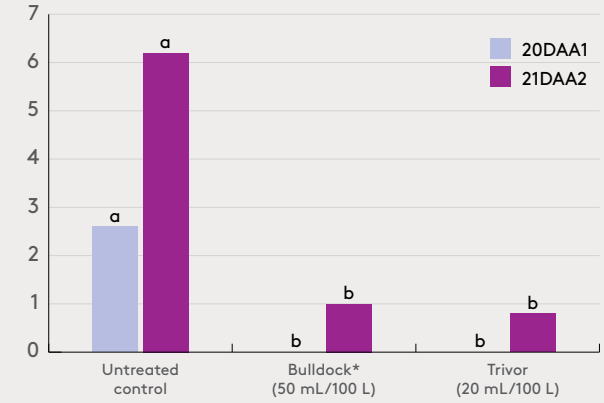


Figure 3: Mean number of macadamia nuts damaged by fruit/banana spotting bugs.

(Bundaberg, Qld, 2015, Trial ID: ADA14375#7)

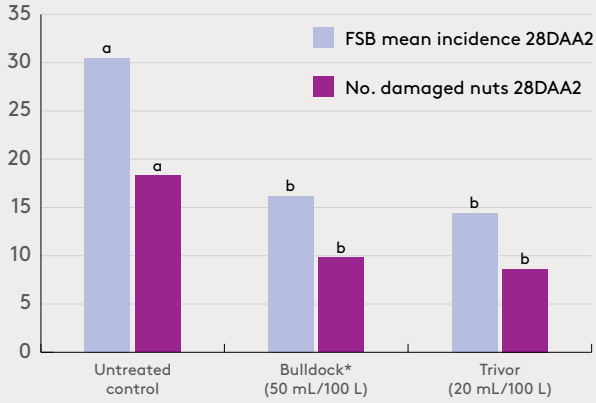


Figure 4: Mean % incidence of fruit/banana spotting bugs and damaged macadamia nuts.

(Gympie, Qld, 2014, Trial ID: FAR13343)

Mangoes

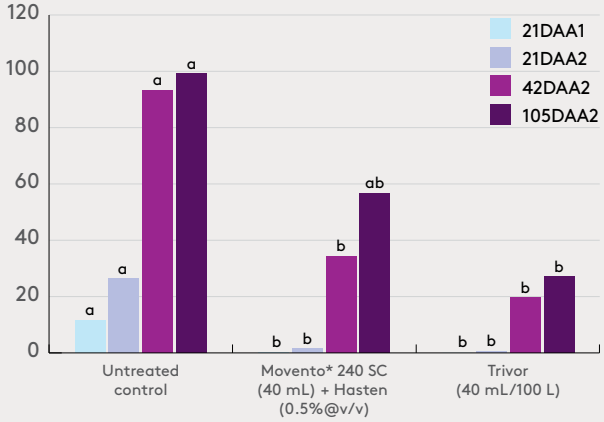


Figure 5: Mean % density of male mango scale per mango leaf.

(Ayr, Qld, 2016, Trial ID: ADA1601)

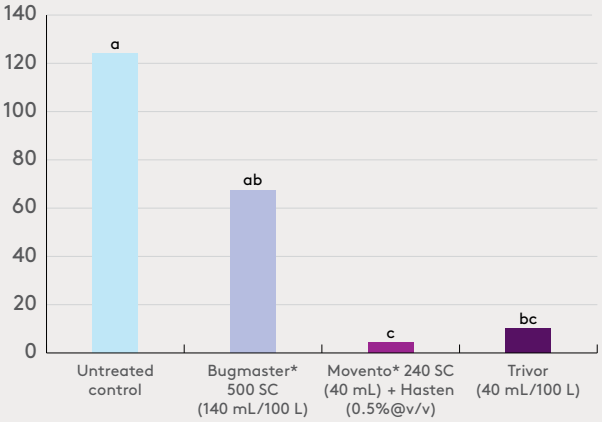


Figure 6: Mean number of live female mango scale on fruit at harvest (42DAA2).

(Electra, Qld, 2016, Trial ID: ADA14375#9)

Application guidelines

Mixing

Shake container before opening. Two-thirds fill the spray tank with clean water and add the required quantity of Trivor with the agitator operating. Top up the spray tank to the required volume with clean water with the agitator running. Maintain agitation while spraying. Trivor is a dispersible concentrate (DC) formulation. It is added to the spray tank after any water dispersible granular (WG) or suspension concentrate (SC) formulations and before any emulsifiable concentrate (EC) or soluble liquid concentrate (SL) formulations.

Adjuvants

Trivor does not require the addition of an adjuvant to achieve maximum efficacy. While a number of adjuvants have been tested for compatibility, none add to the performance of Trivor.

Compatibility

The following products have been tested for both physical and biological compatibility with Trivor and do not present a phytotoxicity risk or a reduction in target insect control when tank-mixed. As formulations of other manufacturer's products are beyond the control of ADAMA and water quality varies with location, all mixtures should be tested prior to mixing commercial quantities. Please contact your local ADAMA representative for further information on compatibility of Trivor with other products or visit adama.com for the latest information.

Spray volume

For best results, apply Trivor as a dilute (high volume) spray ensuring thorough coverage of fruit and foliage throughout the crop canopy. Concentrate spraying can also be used when targeting certain pests, such as Pink wax scale and Oleander scale. If concentrate spraying, ensure suitable equipment is used to achieve coverage of foliage and fruit and observe the maximum use rates per hectare, per application.

Crop	Avocados	Macadamias	Mangoes
	Amistar* 250 SC Altacor* Insecticide Barmac Copper Oxychloride Kocide* Blue Xtra	Howzat® SC Cabrio* 250 EC Score* 250 EC Rovral* Aquaflo Barmac Copper Oxychloride Kocide* Blue Xtra Custodia® Forte Merivon*	Amistar* 250 SC Octave* WP + mancozeb Aero* 600 WG Polyram* 700 DF Barmac Copper Oxychloride Kocide* Blue Xtra

Always read and follow the product label directions of all tank-mix partners. **Care must be taken when tank mixing more than two products, particularly products that are not manufactured by ADAMA, due to potential variation in formulations or product quality. Seek competent advice or perform a jar test if unsure before proceeding.** Note that physical compatibility tests determine whether the products will mix and are suitable for application using commercial spray equipment. Physical compatibility tests do not check for adverse crop effects or the biological efficacy of the individual products when applied as a tank-mix. Recommendations for use, handling, storage and disposal of products may also change over time. The information contained in this document is not intended to replace the product label. The product label, safety data sheet and supporting product information can be viewed on the ADAMA website www.adama.com or by scanning the QR code located on this document or the product packaging.

Scan here for more information

ADAMA

Plemax® insecticide

For a good looking head.

Product overview

Plemax is a highly effective insecticide that provides robust knockdown and residual control of key chewing pests in brassicas, leafy vegetables and fruiting vegetables (excluding cucurbits). Formulated as a high quality suspension concentrate (SC), Plemax is a unique combination of two active ingredients, novaluron and indoxacarb.

Mode of action

GROUP	15	22A	INSECTICIDE

Novaluron and indoxacarb target different mechanisms in insect pests. Using different insecticide modes of action reduces the risk of resistance developing to either active ingredient. Additionally, novaluron and indoxacarb have similar residual activity and rainfastness, which increases the likelihood of target pests ingesting both active ingredients.

Novaluron is a benzoylurea insect growth regulator (Group 15) that inhibits chitin synthesis primarily in larvae. Chitin is a key structural component of the cuticle of insects. Reduced chitin production in larvae can cause abnormal cuticle formation and abortive moulting. Exposure of larvae to novaluron can disrupt metamorphosis, resulting in abnormal pupal formation and a significant reduction in adult emergence. Due to its slower mode of action, novaluron has limited knockdown but is particularly effective when applied in combination with a partner insecticide with more rapid activity, such as indoxacarb.

Indoxacarb is an oxadiazine insecticide (Group 22A) that inhibits sodium ion entry into insect nerve cells. Larvae exposed to a lethal dose of indoxacarb usually stop feeding within four hours, with paralysis and mortality occurring after 4–48 hours.

At a glance

New mode of action	Plemax introduces a new mode of action (Group 15) for use in brassicas, leafy vegetables and fruiting vegetables (excluding cucurbits).
Dual modes of action	Plemax combines indoxacarb with novaluron for improved efficacy and resistance management.
Knockdown and residual control	Plemax provides excellent knockdown and residual control of hard-to-control pests, such as Diamondback moth and *Helicoverpa* spp., as well as other key chewing pests.
Improved yield and quality	Plemax protects yield and quality by significantly reducing feeding damage caused by chewing pests.
Integrated pest management	Plemax is ideal for use in IPM programs based on crop monitoring, economic thresholds and beneficial insects.
Flexible use	Plemax can be used in spray programs throughout the season. Workers can re-enter treated crops once the spray has dried.
Technical support	Adama's Plemax stewardship program and Trapview population monitoring technology can help you to effectively manage resistance.

Novaluron and indoxacarb act mainly by ingestion during larval feeding on treated plant surfaces. They are also taken up through the insect cuticle via direct contact with spray or treated foliage. High levels of mortality can occur in first instars hatching on treated foliage or from direct spray onto the egg.

Solo formulations of indoxacarb are already registered and used in vegetables in Australia. Plemax provides efficacy and resistance management advantages compared with existing solo indoxacarb use.

Diamondback moth (DBM)

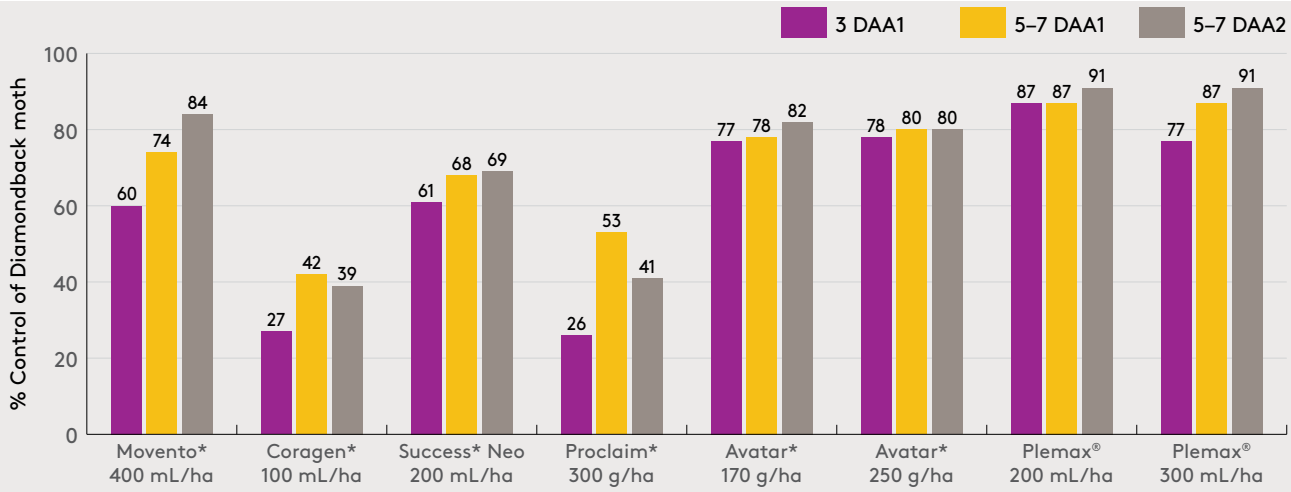
Diamondback moth (*Plutella xylostella*) is the most economically significant pest in brassica crops. Larvae infest brassica species exclusively and feed on all above-ground plant parts. Feeding damage on the underside of leaves are a distinctive symptom and appears as irregular, window-like patches. Intensive insecticide spraying is often required to effectively manage DBM due to its short lifecycle and the low market tolerance to feeding damage. Due to its adaptability, DBM has developed resistance to many active ingredients, including synthetic pyrethroids (SPs), carbamates/organophosphates (OPs), spinosyns (spinetoram), avermectins (emamectin), oxadiazines (indoxacarb), phenylpyrazoles (fipronil) and more recently, diamides (chlorantraniliprole, cyantraniliprole and flubendiamide). The use of IPM strategies, including strategic use of insecticides, regional management programs and conservation of beneficial insects are important for effective management of DBM.

Targeting DBM with Plemax

- Regularly monitor crops for eggs and larvae. Additionally, Trapview can be used to monitor the activity of DBM adults.
- Application should be timed to target eggs or newly-hatched larvae before they become entrenched within the crop.
- Do not apply if crop monitoring indicates high levels of predators present and/or parasitism from egg and larval parasitoids (i.e. *Trichogramma pretiosum* and *Diadegma semiclausum*) and economic thresholds have not been exceeded.
- Apply up to three applications of Plemax per crop, with a maximum of two consecutive applications. If applying three Plemax sprays in a season, do not apply any additional products containing indoxacarb (e.g. Avatar*).
- Use the higher rate under higher pressure to improve residual control and use a minimum spray interval of seven days between applications under high pressure scenarios.
- Use of Plemax is subject to a Croplife Australia resistance management strategy for Diamondback moth in brassicas. Please review this strategy before using Plemax.

DBM pupae and larvae.

DBM adult.



All treatments were applied twice and assessments made at 3 and up to 7 days after application.
**Registered trademarks. All treatments applied with a registered surfactant. DAA = Days after application.*

Figure 1: Plemax efficacy against DBM.
(2 trial average, South East Queensland 2018–2019, AD-AU-18-I14-1/2)

Heliothis

Heliothis (*Helicoverpa armigera* and *H. punctigera*) feed on hundreds of plant species, including all major vegetable crops grown in Australia. Cotton bollworm (*H. armigera*) is considered the more serious pest in Australia, as it has the ability to rapidly develop resistance to insecticides, a broader host range and survives within cropping regions from season to season. Populations tend to be localised, with northern growing regions experiencing high pressure during warmer months of the year. There is widespread resistance to carbamates, OPs and SPs; and emerging resistance to diamides (e.g. chlorantraniliprole) and indoxacarb. In recent years, the incorporation of selective insecticides, area-wide management, spray windows and use of parasitoids such as *Trichogramma* spp. are improving management of Cotton bollworm. Native budworm (*H. punctigera*) is less economically significant, has a narrower host range and does not infest grass species. Populations are more variable between years as they are a migratory species that breeds on flowering plants in inland Australia during winter months rather than pupating locally in high numbers like Cotton bollworm.

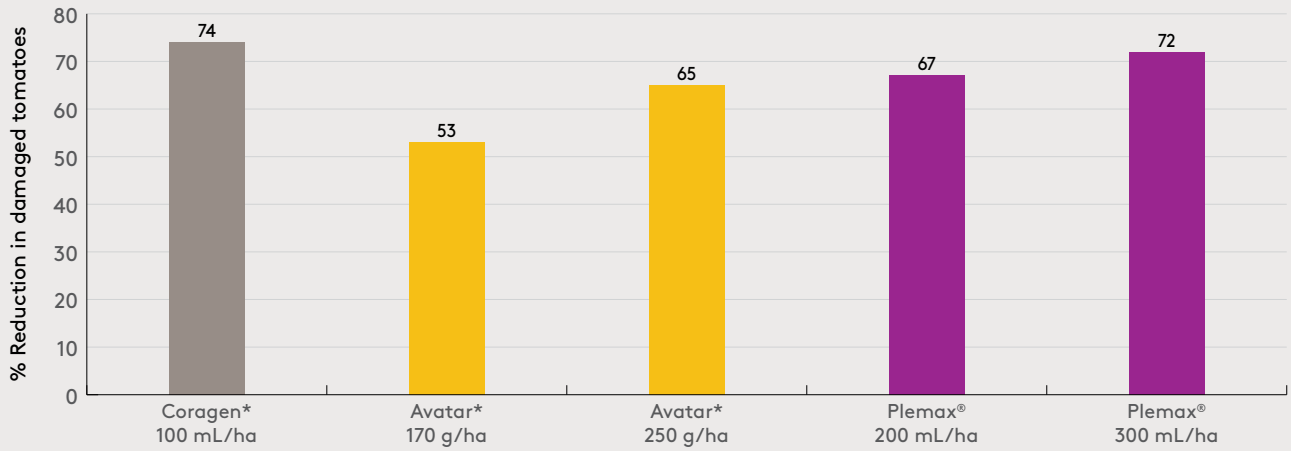
Targeting Heliothis with Plemax

- Regularly monitor crops for eggs and larvae. Additionally, Trapview can be used to monitor the activity of DBM adults.
- Application should be timed to target eggs or newly-hatched larvae before they become entrenched within the crop.
- Do not apply if crop monitoring indicates high levels of predators present and/or parasitism from *Trichogramma* spp. and economic thresholds have not been exceeded.
- Apply up to three applications of Plemax per crop, with a maximum of two consecutive applications. If applying three Plemax sprays in a season, do not apply any additional products containing indoxacarb (e.g. Avatar*).
- Use the higher rate under higher pressure to improve residual control and use a minimum spray interval of seven days between applications under high pressure scenarios.
- Use of Plemax is subject to a Croplife Australia resistance management strategy for Heliothis in tomatoes. Please review this strategy before using Plemax.

Cotton bollworm caterpillar.

Cotton bollworm adult.

Cotton bollworm damage to tomato fruit.



**Registered trademarks. All treatments applied with a registered surfactant.*

Figure 2: Plemax efficacy against Cotton bollworm in tomatoes.
(3 trial average, FZ-14-I06, FZ-13-I08 & AD-AU-16-I02-3)

Plemax® insecticide

Registered uses

Crop	Pest	Application rate
Brassica crops: Broccoli, Brussels Sprouts, Cabbage (closed head varieties only), Cauliflower	Cabbage white butterfly Cotton bollworm Native budworm	200 mL/ha
	Cabbage cluster caterpillar Centre Grub Cluster caterpillar Diamondback moth	200 to 300mL/ha
Leafy vegetable crops: Chicory,Cress, Endive, Fennel, Kale, Lettuce (closed head and leafy varieties), Mustard, Silver Beet, Spinach and Chinese Leafy Vegetables (Bok Choy, Choy Sum, Chinese Cabbage)	Cabbage white butterfly Cotton bollworm Native budworm Cabbage cluster caterpillar Centre grub Cluster caterpillar Diamondback moth	200 mL/ha
Fruiting vegetable crops: Eggplant, Peppers (Capsicum and Chilli), Tomato (trellis and field)	Cotton bollworm Native budworm	200 to 300mL/ha or 20 mL/100 L dilute
	Potato moth (Tomato leaf miner)	200 mL/ha or 20 mL/100 L dilute

Application

Plemax should be applied after careful monitoring of pest populations to determine the need for application based on local thresholds and to ensure the correct timing of application. More than one application of Plemax may be required to control a pest population. Where multiple applications are required, Plemax should be used in rotation with other modes of action. Plemax has only a short-term impact on beneficial insects when used in accordance with the label directions and can be incorporated into IPM programs that are using beneficial arthropods.

Mixing

Use only clean water. Half fill the spray tank with clean water and add the appropriate amount of Plemax directly to the spray tank. DO NOT premix or slurry. Agitate and add other companion products or surfactant, then completely fill the tank with water. Mix thoroughly and continue mechanical or hydraulic agitation. Use the prepared spray immediately. DO NOT store the spray mixture or allow it to sit for a period of time without agitation.

Spray volume

Thorough coverage is essential. Adjust water volumes to crop stage and size to obtain point of run-off (200–1000 L/ha). DO NOT apply Plemax using ultra low volume (ULV) methods. Applying larger droplets (150–200 micron diameter) reduces drift potential but will not minimise drift if applications are made improperly or under unfavourable environmental conditions. Larger droplets may reduce the effects of evaporation.

Surfactant / wetting agent

Crop	Recommended surfactant /wetting agent
Eggplant, Peppers (Capsicum and Chilli), Leafy Vegetables and Chinese Leafy Vegetables, Tomato	Use a non-ionic surfactant/ wetting agent at 15 g active/100 L (e.g. Agral* 600 or Shirwet* 600 at 25 mL/100 L).
Broccoli, Brussels Sprouts, Cabbage, Cauliflower	Use a non-ionic surfactant/ wetting agent at 75 g active/100 L (e.g. Agral* 600 or Shirwet* 600 at 125 mL/100 L).

DO NOT add a non-ionic surfactant/wetting agent if mixing with another product that already contains a surfactant and/or the product label advised not to add a surfactant; or if mixing with a liquid fertiliser. DO NOT use BS1000 or Activator-90*, as they may cause crop phytotoxicity.*

Scan here for more information

Notes


ADAMA
NIMITZ®
Product Guide

Revolutionary Control

A unique new tool for nematode management providing:

- Real nematode control through rapid contact action
- Simple, safe and effective application options at low rates
- Maximised crop potential and greater grower returns
- Minimal impact on beneficial and non-target species.

Nematodes

Nematodes – also known as roundworms or eelworms – are the most numerous multicellular animals on the planet, numbering more than 28,000 known species. With soil samples often containing in excess of millions of individual nematodes per square metre, it is estimated they account for around 80% of all individual animals on earth. Nematodes may be saprophytic (feeding on broken down organic matter), predaceous (feeding on other nematodes, bacteria, fungi or even smaller organisms), entomopathogenic (feeding on insects) or parasitic (feeding on plants).

Plant parasitic nematodes are among the most destructive and problematic pests for growers around the world, severely impacting crop development and yield. These nearly invisible killers affect a variety of crops globally and are responsible for an estimated $125 billion in annual plant losses. Crops in serious danger include Tomatoes, Capsicums, melons and other cucurbits, Carrots, cereals, Strawberries, Potato, Sugarcane, Soybeans, leafy vegetables and many others.

Not all nematodes are responsible for crop damage. Beneficial nematodes include those that feed on soil borne insects, bacteria and fungi that are harmful to plants, making them an important part of the soil microbiology.

The impact of plant parasitic nematodes

Because these organisms are unseen, they can often appear to be less of a threat than they really are. Nematodes typically do most of their work, and damage, invisibly beneath the soil. By interfering with the roots and reducing the plant's ability to extract water and nutrients, crop productivity is invariably affected.

In addition to the direct damage they cause to crops, even in low populations, nematodes enable easy penetration of other soil diseases to roots, further exacerbating problems for the plant. Besides reducing crop yields, nematodes can affect the external appearance of the harvested crops. For instance, nematode infected potatoes appear lumpy, carrots can appear forked and unattractive, and fruiting vegetables can be left vulnerable to be scalded by the sun - all becoming unsuitable for sale.

Nimitz® is a novel nematicide developed globally by Adama. Nimitz® has been extensively trialled around the world since 2007 and more than a thousand trials have been conducted across 23 countries, over all continents, in multiple crops and on various nematode types and species.

In field trials, Nimitz® has consistently demonstrated equivalent or better nematode control when compared with the registered standard nematicide or fumigant and in many trials, the greater nematode control achieved by Nimitz® has resulted in a significant increase in marketable yield.

Nimitz® is registered in Australia for use in Capsicum, Chilli, Carrot, Cucumber, Eggplant, Honeydew Melon, Okra, Potato, Pumpkin, Rockmelon, Squash, Sugarcane, Tomato, Sweet Potato, Watermelon and Zucchini with development work continuing extensive list of other crops.

ADAMA

Nimitz® at a glance

Active ingredient	480 g/L fluensulfone
Chemical name	5-Chloro-2-[(3,4,4-trifluoro-3-buten-1-yl)sulfonyl]thiazole
Chemical Group	heterocyclic fluoroalkenyl sulfones
Registered Crops	Capsicums, Chillies, Eggplant, Tomatoes, Okra, Carrots, Potatoes, Sweet Potatoes, Sugarcane and cucurbit crops
Target Pest	Root-knot nematode
Formulation Type	Emulsifiable Concentrate (EC)
Application Rate Range	4 – 8 L/ha

Key features

- True nematicidal control
- Fast acting and unique mode of action
- Simple, safe and effective application options at low rates
- Minimal impact on beneficial and non-target species.

Mode of action

Fluensulfone belongs to a unique new chemical class with a new Mode of Action. Studies have shown that fluensulfone is a true nematicide that kills the target by contact, rather than temporary nematostatic (paralysis) activity as seen with current organophosphate and carbamate chemistry.

Nimitz® has rapid activity on nematodes. Within 1 hour of contact nematodes cease feeding and quickly become paralysed. Fluensulfone requires 24 - 72 hours to achieve complete mortality.

Any nematode eggs laid after exposure to Nimitz® are likely to be unviable, or if juveniles do hatch, they do not survive.

Root-knot nematode larvae penetrating a tomato root. Once inside, the larva establishes a feeding site, which causes a nutrient-robbing gall. Photo by William Wergi

Target species

Root-knot nematode

The Root-knot nematode (RKN) group get their name from the characteristic formation of root galls on affected plants and are among the most damaging of plant-parasitic nematodes.

In Australia, there are five relatively widespread Meloidogyne species (*M. javanica*, *M. incognita* and *M. arenaria* in warm climates and *M. hapla* and *M. fallax* in cool climates).

They are capable of attacking a wide range of plants and can cause economic damage to crops with as few as 1 - 2 nematodes per gram of soil.

In Australia, RKNs have been reported to attack scores of different plant families including some of our biggest crops; Cucurbitaceae (Cucumbers, Melons, Squash, Zucchini), Solanaceae (Capsicums, Tomatoes), Fabaceae (Chickpeas, Soybeans, Peas, Beans, Lucerne), Musaceae (Bananas), Poaceae (Wheat, Barley, Corn and Rice), Vitaceae (Grapes), Sugarcane and Malvaceae (Cotton). The level of susceptibility varies in each host.

The characteristic root galls produced by RKN infested plants are outgrowths of the roots themselves. Photo by Steve Tancred

Adult female RKNs live inside the root gall where they feed, mature and lay eggs.

Root-knot nematode damage most often results in poor growth and reduced resistance to other problems such as moisture stress and disease. High enough levels of damage early on can lead to total crop loss.

The diminished capacity of the roots due to galling usually leads to a reduction in the number of leaves - and therefore a decrease in photosynthetic ability - a reduction in flowering, and subsequent decrease in the yield of fruit produced.

Symptoms most visually obvious above the ground may include stunted plant growth, yellowing of the leaves and wilting on hot days as plants struggle to draw moisture from the soil effectively.

Root lesion nematodes

Nimitz is registered for the control of root lesion nematodes (RLN) for sugarcane only. The RLN species that cause serious damage to the sugarcane is Pratylenchus zeae. RLN are an important pest as the occur in all type of soil (while RKN are mostly present in light, sandy soils). The damaged root system limits the ability of the plant to access moisture and nutrients, resulting in slower stalk growth and reduced crop yield.

Application

Nimitz® can only be used prior to transplanting seedlings with at least 2 true leaves and should not be used prior to direct seeding these crops.*

Table 1. Fruiting Vegetables

Crop	Pest	Rate/ha
Transplanted crops: Cucurbits, Tomatoes, Capsicum, Chilli, Eggplant, Okra	Root-knot nematode (*Meloidogyne* spp.)	4 – 8 L

Table 2. Root and tuber vegetables

Crop	Pest	Rate/ha
Carrots, Potatoes, Sweet potatoes	Root-knot nematode (*Meloidogyne* spp.)	4 – 8 L

Table 3. Sugarcane

Crop	Pest	Rate/ha
Sugarcane	Root-knot nematode (*Meloidogyne* spp.), Root lesion nematode (*Pratylenchus zeae*)	4 L

**Refer to website for up to date Product Label which may include new crops in future.*

Timing

Nimitz® may be applied by either broadcast or banded boomspray application, or via drip irrigation. These application methods are similar to application techniques for existing registered nematicides, so no new machinery or application equipment will be required for those who are already users of these products. Application must be made to well prepared, bare, moist soil 7 days prior to the transplanting of seedlings in treated areas and must be incorporated either mechanically to a depth of 15 - 20 cm for broadcast/ boomspray applications, or with sufficient irrigation to deliver the product to the future root-zone.

Use Rates

Nimitz® is applied at a rate range of 4 - 8 L/ha. The choice of use rate is dependent on the level of expected nematode numbers, cropping history, varietal susceptibility to nematodes and other factors. Use the highest rate of Nimitz® when crops are most vulnerable and marketable yield is of high priority. The lower rate of Nimitz® may be used for nematode population maintenance in conjunction with a range of other nematode management strategies.

Compatilbility Classification Nimitz Nematicide 8.0 L/ha Rate

Partner Poduct	Rate/ha	Water L/ha	Classification
Metham	800 L	0	Compatible
Metham	500 L	0	Compatible
Metham	800 L	400	Caution
Metham	500 L	400	Caution
Strikeout	2.0 L	60	Compatible
Pyrinex Super	1.88 L	60	Compatible
Venom 240	156 mL	60	Compatible
Kohinor 350	1.44 L	100	Compatible
Albatross 200	65 mL	60	Compatible
Jubilee 500	500 mL	60	Compatible
Serenade Prime	7.0 L	200	Compatible

Broadcast Application

Nimitz® may be applied using coarse droplets from conventional spray equipment and a minimum of 200 litres of water per hectare to obtain a uniform application. Once applied, mechanically incorporate as soon as possible to a depth of 15 - 20 cm to insure even distribution. Rainfall or a light irrigation of 10 - 15 mm of water within 1 - 5 days after application may increase efficacy.

Banded Application

The amount of product required for a banded application will vary with the width of the planting bed and row length. Rates need not be concentrated in the row, but should be applied based on percentage of the area treated. For example, if only treating a bed width of 50 cm in a field with 1 metre row spacings (50%), the actual rate of Nimitz® applied per hectare grown is half the sprayed hectare rate (2 L/ha rather than 4 L/ha, or 4 L/ha rather than 8 L/ha).

Drip Irrigation

Nimitz® can be added directly to sub-surface irrigation systems when applied with sufficient water and duration to uniformly wet the entire bed width and root zone (15 - 20 cm deep) where crops are to be planted. The amount of water needed for an application will depend upon the initial level of soil moisture, the soil type, % organic matter and condition, and the placement of the drip tape as well as drip tape emitter spacing etc. Again, rates need not be concentrated in the row, but should be applied based on percentage of the area treated as for banded application.

Rainfastness

Since Nimitz® is being applied to soil and requires moisture to assist in its incorporation and activation, light rain that falls immediately after or even during application is unlikely to reduce its efficacy. Extremely heavy rain that moves Nimitz® away from or below the targeted zone before it has had time to be effective may mean a reduction in nematode control. Avoid application during rain or when heavy rain is forecasted within the next 24 - 48 hours.

In Furrow

In Sugarcane, apply a single application of Nimitz® as a spray into the furrow at planting. Use a spray nozzle that will deliver a coarse spray quality in a minimum volume of 100 L/ha, in a band 30 – 50 cm wide over the centre of the row immediately prior to soil cover being brought in over the sett.

Harvest Withholding Period

No harvest withholding period applies to Nimitz® when used as directed. Growers should note that suitable Maximum Residue Levels (MRLs) or import tolerances may not be established in all markets for produce treated with Nimitz®. If you are growing produce for export, please check with Adama for the latest information on MRLs and export tolerances before using this product.

Rotational Cropping Restrictions

Growers may plant an area treated with Nimitz® with a registered crop such as Tomatoes, Capsicums or cucurbits without restriction. Growers applying Nimitz® must observe the following plant-back (recropping) intervals:

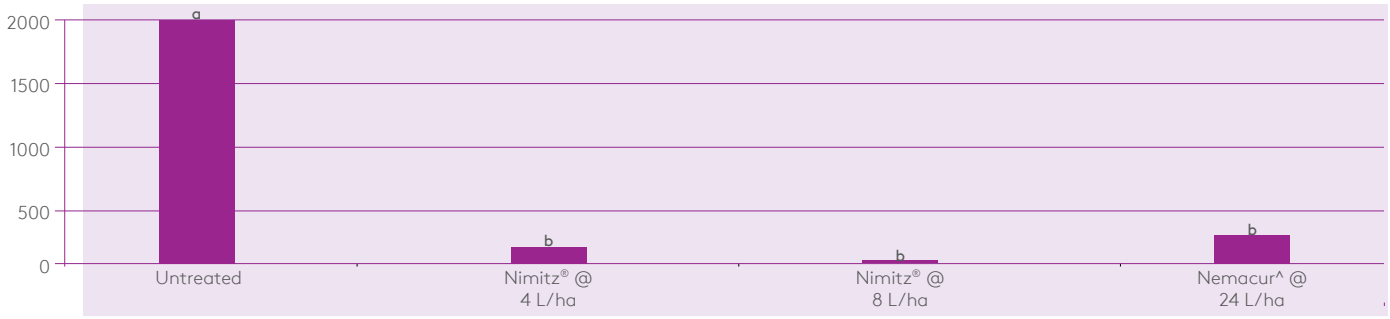
Crop	Plant-back interval
Cover crops (green manure crops) and pastures	No restriction
Cucurbits, Tomatoes, Capsicum, Chilli, Eggplant, Okra, Carrots, Potatoes, Sugarcane, Sweet Potatoes	
Other non-root/tuber vegetables	30 days
Other root and tuber vegetables	180 days
Oats and eaten hay	2 years
All other crops not for export	180 days

Grazing Withholding Period and Export Slaughter Interval

No harvest or grazing withholding period applies to Nimitz® when used as directed.

Trial Results

Effective Nematode Control
Number of 2nd stage RKN juveniles in 200 mL of soil 103 DATP



cv 'Plato' Capsicums - Stanthorpe QLD, 2010/2011. Conducted by Orchard Services – Steve Tancred
Means depicted by columns with data labels of the same letter are not significantly different at the 5% level according to LSD test.

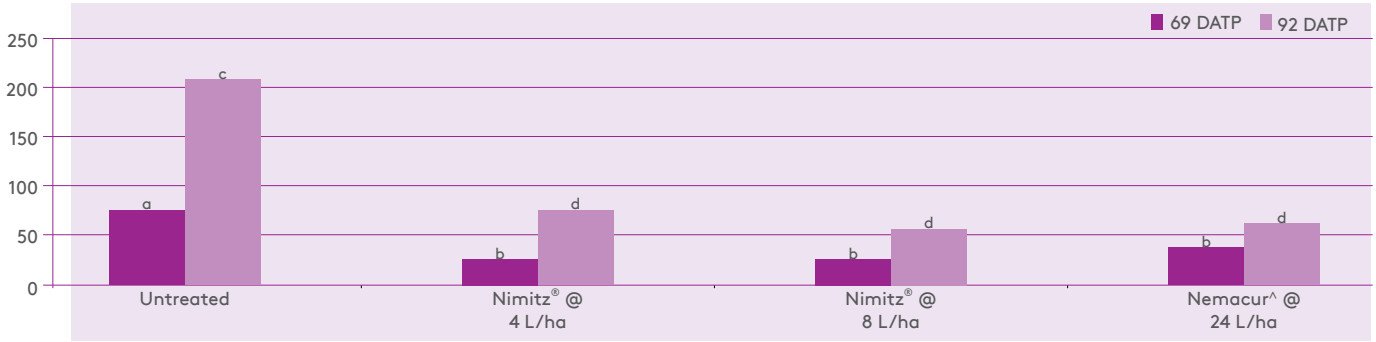
^Note - Nemacur is a registered trademark and is now de-registered for this use.

Conclusion from this and other trials

Nimitz® provides control of RKN in capsicums as efficaciously as the current standard when applied at 4, 6 and 8 L/ha.

Trials commonly display a clear rate response with 4 L/ha providing satisfactory reduction in nematode numbers under low to moderate pressure and 8 L/ha providing the most robust level of control under more testing conditions.

Risk Management
Number of Root Galls/Plant



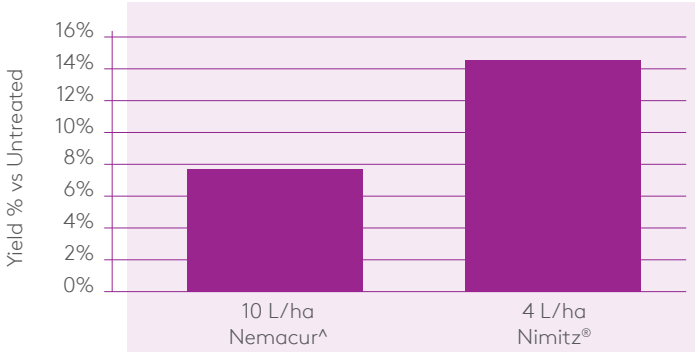
cv 'Plato' Capsicums - Stanthorpe QLD, 2010/2011. Conducted by Orchard Services - Steve Tancred
Means depicted by columns with data labels of the same letter are not significantly different at the 5% level according to LSD test.

^Note - Nemacur is a registered trademark and is now de-registered for this use.

Conclusion from this and other trials

Nimitz® reduces root gall numbers from RKN in capsicums as effectively as the current standard when applied at 4 and 8 L/ha when applied at low to moderate nematode levels. Trials commonly display a clear rate response with 4 L/ha providing satisfactory reduction in nematode root galling under low to moderate pressure and 8 L/ha providing the most satisfactory level of gall reduction under more testing conditions.

Nimitz® Sugarcane Yield (%) results 4 trial average

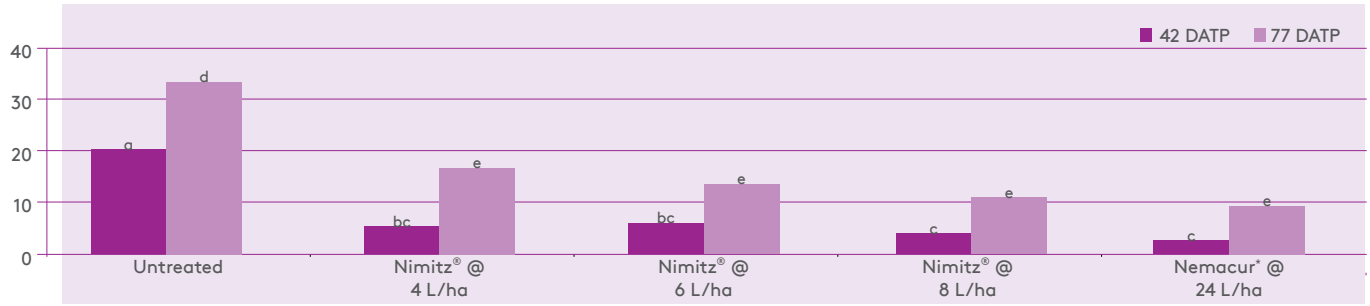


Conclusions from these trials and other trials

In Sugarcane based on a 4 trial average, a single application of Nimitz® at the rate of 4 L/ha have contributed to a 15% yield increment vs the untreated control whereas Nemacur application at the rate of 10 L/ha have contributed to a 7.7% yield increment vs the untreated control.

FZ-13-N01-13-Mackay, FZ-13-N01-14-South Ballina, FZ-13-N01-15-Oakenden,
FZ-13-N01-16-Burnett Heads
^Note - Nemacur is a registered trademark and is now de-registered for this use.

Risk Management
Mean Root Galling Index

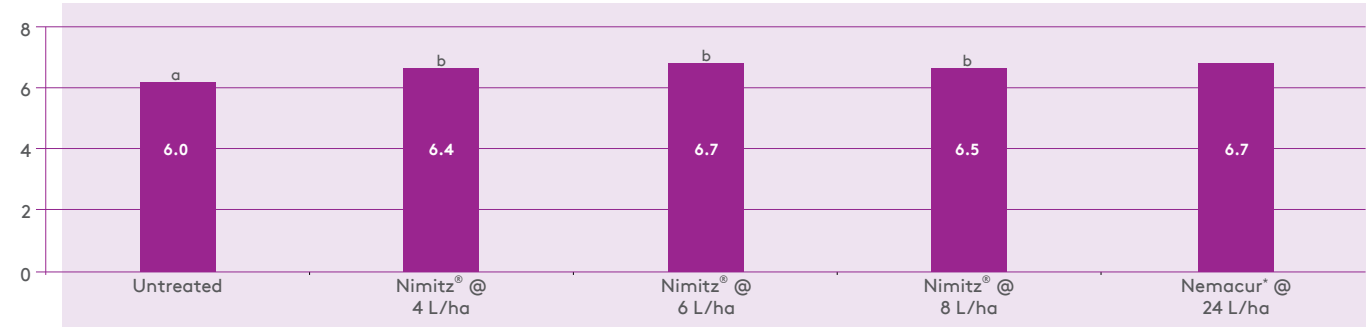


cv 'Pinnacle' Tomatoes - Bowen QLD, 2011. Conducted by Peracto – Chris Monsour
Means depicted by columns with data labels of the same letter are not significantly different at the 5% level according to LSD test.

Conclusion from this and other trials

Nimitz® reduces root galling damage from RKN in fruiting vegetables in the establishment phase of cropping as effectively as the current standard and even later into the crop when applied at 6 and 8 L/ha. Trials commonly display a clear rate response with 4 L/ha providing satisfactory reduction in nematode root galling under moderate pressure and 8 L/ha providing the most satisfactory level of gall reduction under higher pressure.

Improved Grower Returns
Mean Fruit Weight kg per Plant



cv 'Pinnacle' Tomatoes - Bowen QLD, 2011. Conducted by Peracto – Chris Monsour
Means depicted by columns with data labels of the same letter are not significantly different at the 5% level according to LSD test.

Conclusion from this and other trials

Whilst there is a trend for more ***numbers*** of fruit on treated plants, the difference is not significant. However, the ***weight*** of fruit harvested from Nimitz® treated plots was significantly higher than the untreated control and equal to the Nemacur treated plot in this trial and in the majority of yield trials performed increases in yield ranged from 10 –28%.

Root galls are rated according to Zeck's Scale (Zeck, 1971) and given a 0-to-10 value:

0 = no galls	5 = 25% of roots severely galled
1 = very few small galls	6 = 50% of roots severely galled
2 = numerous small galls	8 = no healthy roots but plant is still green
3 = numerous small galls of which some are grown together	9 = roots rotting and plant dying
4 = numerous small and some big galls	10 = plant and roots dead

Root Galling Index Calculation#

$$\text{Galling index} = \frac{\Sigma[\text{number of plants in each rating})(\text{rating value})]*100}{(\text{number of plants assessed})(\text{highest rating value})}$$

The Mean Root Galling Index takes into account the level of gall damage per plant along with the number of plants sampled and the worst damage rating in each plot.

Resistance Management

Whilst it is the generally held opinion that the development of nematode populations significantly resistant to existing nematicides and fumigants has not been observed under field conditions to date, the occurrence of 'accelerated degradation' of these compounds in soil has been well documented.

Accelerated degradation refers to the breakdown of these active ingredients and their metabolites at rates that are faster than those commonly seen and high enough to significantly reduce or totally eliminate the usefulness of the nematicide when applied to a particular soil.

Accelerated degradation may occur as a result of an increase in soil pH – when lime is applied to soil for instance - or via 'enhanced biodegradation' where microorganisms have adapted - after exposure to a chemical over a long term through repeated applications to that soil – and are able to metabolise the product.

Whilst fluensulfone is not prone to accelerated degradation due to pH, in order to reduce the potential of Nimitz® efficacy being reduced by enhanced biodegradation, Nimitz® should not be used as the only nematode control measure and should be limited to one application per crop, with a maximum of 8 L/ha in total per year.

Fluensulfone provides an important tool for the management of parasitic nematodes when used in an Integrated Management Strategy, and may assist in extending the usefulness of other traditional nematicides whilst they are still available.

Features

- Excellent control of key nematode pests in Tomato, Capsicum and cucurbit crops
- Applied using existing nematicide application methods
- Long term control when used as part of a Nematode Management Strategy
- Narrow activity spectrum and IPM compatible.

Benefits

- Maximised crop potential and greater grower returns
- No additional application equipment investment required
- Confidence that effective nematode control will be achieved now and into the future
- Highly effective against susceptible nematodes, but with minimal impact on non-target and beneficial species.

Healthy Rockmelon roots - Zecks Gall rating for RKN=0.

Nimitz® Untreated v Treated Capsicum 84DAT

Management Options

There are a range of management options available for controlling Root-knot nematodes, and successful strategies will usually involve the combination of several of these.

Nematicides

Application of either fumigant or contact nematicides has been a standard practice for many growers of susceptible crops in nematode prone areas for over 50 years and in many areas, using synthetic chemistry to reduce the impact of RKN remains an effective option and an integral part of nematode management strategies.

The availability of Nimitz® with its fast acting, unique Mode of Action will ensure that chemical options remain a key tool of nematode management.

The use of other traditional nematicides usually requires strict safety procedures and in some cases special application equipment or even a licenced applicator.

Resistant Varieties

Choose varieties that have been selected for their ability to withstand or repel nematode damage and reduce the survival of nematode populations.

Whilst the number of varieties available is increasing and in some cases extensive e.g. processing Tomatoes, options are still limited for many crops and may not suit all growing regions.

For further information on management options and a copy of the booklet Management of Root-Knot Nematode in Vegetable Crops scan your QR reader.

Crop Rotation

Grow resistant crops in rotation with susceptible or tolerant crop species.

Resistant crops reduce the survival of nematode populations. Tolerant crops will not in themselves diminish nematode populations but will not suffer serious yield loss.

Careful planning is required in order to be effective, and alternative crops may not always be as suitable or provide acceptable returns for the grower in that growing season.

Farm Hygiene

The use of nematode-free seedlings and good farm sanitation such as cleaning machinery and equipment before moving between fields and between farms can help reduce the spread of RKN.

Weeds that are also susceptible to RKN can act as hosts, maintaining a bridge between crops, so keeping fields and other areas on farm as weed free as possible will assist in keeping nematode population levels low.

Biological Control and Soil Amendments

The addition of organic matter in the form of manure has been shown to provide a yield benefit not only from the increased availability of nutrients but also due to the suppression of plant pathogens including nematodes.

Access to quality weed-free material, the volume required, and the need for what can be a labour intensive exercise can mean that this is not always a preferred option.

Frequently Asked Questions

What is a nematode?

Nematodes are microscopic organisms also known as 'roundworms' or 'eelworms'. Nematodes may be microbivorous (feeding on bacteria or fungi), predaceous (feeding on nematodes and other small animals), entomopathogenic (feeding on insects) or plant-parasitic (feeding on plants).

Would I know a nematode if I saw one?

Nematodes can't be seen by the naked eye. They live in the free water that surrounds soil particles but even though they are microscopic, some nematodes can move up to a metre in soil in a year. They are attracted to the root exudates of plants and can migrate from untreated areas in between rows into the root zone during the growing season.

How will I know if nematodes are a problem for me?

The most prominent nematode pests of vegetable crops locally are members of the *Meloidogyne genus*. In Australia, there are five relatively widespread Root-knot nematodes (RKN) including *M. javanica, M. incognita and M. arenaria* in warm climates and *M. hapla* and *M. fallax* in cool climates. RKN juveniles enter plant roots which induces root cells to expand and form "giant cells" on which the RKN feed. The giant cells enlarge and visible galls are formed from tissue that surrounds these cells. These galls can be seen if you remove an affected plant and inspect its roots.

Galls disrupt the xylem vessels and the roots cannot function normally with respect to water and nutrients, resulting in above ground symptoms of nutrient deficiency and/or disease and most likely poor irrigation efficiency and yield loss.

The use of nematode monitoring techniques is an important step in understanding what threat RKN pose and what action to take. Manual testing can be carried out using traditional sampling techniques and laboratory analysis or using SARDI Predicta Pt test (DNA extraction). RKN populations detected should then be compared to acceptable thresholds and a management action plan implemented if required. Fields should later be re-sampled to check that the control measures have been effective.

What is Nimitz®?

Nimitz® is a contact nematicide applied prior to transplanting seedlings of Tomatoes, Capsicums, Chilli, Eggplant, Okra and cucurbit vegetables. It is intended for use in fields where nematode damage is preventing growers from reaching the full potential of a crop, whether fields were previously untreated or as replacement for current nematicides. Nimitz® provides an unmatched combination of safety and efficacy, thereby simplifying several aspects of nematode management.

What is fluensulfone?

Fluensulfone is the active ingredient in Nimitz® - a new molecule from a new chemical class known as heterocyclic fluoroalkenyl sulfones.

Who discovered fluensulfone and when?

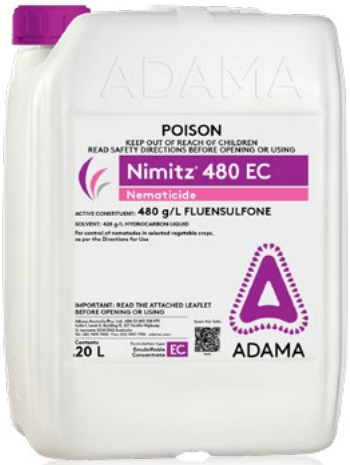
Fluensulfone was discovered in Japan and quickly showed significant promise for use as a replacement to outdated carbamate and organophosphate nematicides. The development project was taken on by Adama (formerly Makhteshim-Agan) in 2006 and now after thousands of trials conducted in 23 countries over all continents, fluensulfone has consistently demonstrated equal or better nematode control when compared to the best commercial standard.

Is Nimitz® a fumigant like some other nematicides?

Unlike some older chemistry, Nimitz® is not a fumigant. The active ingredient is distributed through the soil and into contact with nematodes through water movement via irrigation or rainfall following application.

Is Nimitz® already registered and in use around the world and if so, which countries?

Nimitz® is now registered in the USA, Israel, Brazil, Mexico, India and Australia for use prior to transplanting solanaceous and cucurbitaceous crops with other countries also working toward registration including Canada, Japan, South Africa and many others.



Using Nimitz®

How does Nimitz® control plant-parasitic nematodes?

The fluensulfone in Nimitz® acts quickly and within 1 hour of contact, target nematodes cease feeding and quickly become paralysed. Within 24 - 72 hours complete mortality is achieved, rather than nematostatic or temporary paralysis. Unlike activity seen when using current organophosphate and carbamate chemistry - which allows nematodes to 'unfreeze' when the nematicide passes through the soil profile in time – the action of Nimitz® is irreversible.

Why is the 480 EC formulation chosen for Australia?

We have chosen an Emulsifiable Concentrate liquid in Australia for its effectiveness and to allow Nimitz® to be simply applied as per current practices for many growers here. Nimitz® is likely to be available in several formulations around the world, engineered to accommodate local agricultural practices in different crops and countries.

Is Nimitz® safe to users and the environment?

Nimitz® is scheduled as an S6 Poison meaning it does have to be treated with respect when handling the product, but does not require the Personal Protective Equipment which is mandatory when applying alternative S7 Dangerous Poison nematicides. Nimitz® has a very favourable toxicological and ecotoxicological profile and is considered non-toxic to birds, bees and aquatic life.

Is there a minimum re-entry interval when using Nimitz®?

The REI when using Nimitz® is 12 hours.

Which nematode life cycle stages does it affect?

Nimitz® affects all active stages of the nematode life cycle by inhibiting the feeding and motility of adults and juveniles and the laying, hatching and development of eggs.

Is soil temperature a factor to be considered when applying Nimitz®?

Nematode species become active at different soil temperatures. *Meloidogyne incognita* becomes active when soil temperatures reach 15.6°C. Below this temperature, the immobile nematode does not absorb Nimitz® and may not be affected. Soil temperatures should be monitored, particularly in early spring when temperatures may be insufficient for nematode activity and thus reduce efficacy.

Which nematode species will be controlled by Nimitz®?

Nimitz® is registered for the control of Root-knot nematodes and also Root lesion nematodes in sugarcane. extensive testing has shown that many other species of plant-parasitic nematodes in Australia are susceptible including:

- Root-knot nematode - *Meloidogyne incognita, M. hapla, M. arenaria, M. fallax* and *M. javanica*
- Root lesion nematode - *Pratylenchus zeae* and *P. brachyurus*
- Golden potato cyst nematode - *Globodera rostochiensis*
- Cereal cyst nematode - *Heterodera avenae*
- Stubby root nematode - *Trichodorus spp*
- Citrus nematode - *Tylenchulus semipenetrans*

What effect on other soil micro flora does Nimitz® have?

Nimitz® is unique among nematicides in that it only targets nematodes without disrupting the balance of the soil ecosystem. Healthy, fully functioning soil is balanced to provide an environment that sustains and nourishes plants, soil microbes and other beneficial organisms. Managing for soil health is one of the most effective ways to increase crop productivity, profitability and sustainability.

How long does Nimitz® control nematodes for?

The aim of nematicide treatment for fruiting vegetables is to reduce the initial nematode population in the root zone and allow plants to develop a vigorous root system that can withstand later-season migration of nematodes without affecting crop yield or quality.

Nimitz® has been proven to control the nematodes in the treated zone long enough for crops to establish and thrive and to improve fruit yield despite later incursions from untreated areas. By significantly reducing early nematode damage, Nimitz® is able to increase yields in Tomato, Capsicum and cucurbit crops by 10 – 30% when compared to untreated crops, depending on the level of RKN infestation.

Does residual control last longer on lighter soils or heavier soils? Is pH a factor?

The half-life (DT_{50}) of fluensulfone varies from 7 – 17 days, according to soil type. The length of effectiveness in light soils is slightly shorter than in heavy soils. The activity of Nimitz® is not affected by soil pH and there is no need to adjust the pH of water used to apply Nimitz®.

Resistance Management

What pressure is currently on nematicides in terms of resistance developing around the world and here in Australia? What is 'accelerated degradation' and how does it affect current nematicides in soil?

Whilst it is the generally held opinion that the development of nematode populations significantly resistant to existing nematicides and fumigants has not been observed under field conditions to date, the occurrence of 'accelerated degradation' of these compounds in soil has been well documented.

Accelerated degradation refers to the breakdown of these active ingredients and their metabolites at rates that are faster than those commonly seen and high enough to significantly reduce or totally eliminate the usefulness of the nematicide when applied to a particular soil.

Accelerated degradation may occur as a result of an increase in soil pH – when lime is applied to soil for instance - or via 'enhanced biodegradation' where microorganisms have adapted - after long term exposure through repeated applications to that soil – and are able to metabolise the product.

Whilst fluensulfone is not prone to accelerated degradation due to pH, in order to reduce the potential of Nimitz® efficacy being reduced by enhanced biodegradation, Nimitz® should not be used as the only nematode control measure and should be limited to one application per crop, with a maximum of 8 L/ha in total per year.

Fluensulfone provides an important tool for the management of parasitic nematodes when used in an Integrated Management Strategy, and may assist in extending the usefulness of other traditional nematicides whilst they are still available.

Will Nimitz® form part of a Resistance Management Strategy?

As always, an integrated approach should be adopted to reduce the pressure on any one management practice. Relevant measures include the use of healthy seedlings (insect, pathogen and nematode-free), planting nematode resistant varieties when available, rotation with alternative crops that do not favour the survival of Root-knot nematodes, removal and destruction of volunteer seedlings from susceptible crops and other weeds, avoiding carryover of nematode contaminated soil between sites and the promotion of optimal growing conditions for the crop to increase tolerance to nematode infections.

For further information on management options and a copy of the booklet 'Management of Root-Knot Nematode in Vegetable Crops', visit adama.com.

Compatibility

Which soil applied insecticides, fungicides and herbicides is Nimitz® compatible with if any?

Nimitz® may be applied in tank mixes with other products registered for application 7 days prior to transplanting Tomato, Capsicum and cucurbit seedlings.

The suitability of mixing partners should be considered carefully based on the timing of the Nimitz® application and the need for any subsequent irrigations to incorporate and dissipate the Nimitz® prior to transplanting.

Do not apply Nimitz® with any other product before testing for physical and chemical compatibility of the mixture. To determine compatibility, pour the recommended proportions of the product(s) into a suitable container. After mixing, wait 30 minutes and check to see if the product remains mixed. If the product remains mixed, it is considered physically compatible. Read and carefully observe the most restrictive labelling limitations and precautions of all products used in any tank mix.

Can I mix Nimitz® with liquid fertilisers? Will any mixtures have adverse crop effects?

A list of compatible mixing partners is presently being considered, however, due to the variable nature of some liquid and soluble fertiliser products, a physical compatibility test as above should be performed.

Also, the effect on efficacy of soluble fertilisers after application of Nimitz® and any subsequent irrigations to incorporate and dissipate the Nimitz® prior to transplanting should be considered.

Application Timing and Crop Safety

When do I apply Nimitz®?

Transplanted crops are most vulnerable just after planting, when the plant is not yet established and any damage to the roots can cause a delay in crop development or make roots vulnerable to disease infection.

Once parasitic nematode species have penetrated a root, control with any nematicide is more difficult. By applying Nimitz® to a well-prepared, weed-free bed 7 days prior to transplanting seedlings, growers are able to effectively target the pest.

Can I use my current application equipment?

Application is as simple as applying via drip irrigation in the same way many other nematicides, insecticides and fertilisers are currently added. Alternatively, you can broadcast or band-spray with a boom – as you might with a residual herbicide – and then incorporate into the soil where the nematodes are and the seedlings are to be transplanted.

What rate of Nimitz® should I choose?

Based on extensive testing, a rate range of 4 to 8 litres per hectare of Nimitz® 480 EC is registered to control Root- knot Nematode. Suitable efficacy has been achieved with rates of Nimitz® at the lower end of the range when used under low to moderate RKN infestation in soils that have been prepared well in conjunction with a thorough nematode management strategy.

When RKN numbers are likely to be higher - or indeed have been tested and shown to have greater than 100 RKN per 200 mL of soil - it is recommended that the 8 L/ha rate of Nimitz® is chosen.

A maximum of 8 L/ha of Nimitz® may be used per year in any one treated area and only 4 L/ha of Nimitz® per year in Sugarcane.

Which application method provides the best results in terms of nematode control?

The aim of any Nimitz® application is to create a nematode-free zone within the bed for the early-season root system to grow uninhibited by nematode attack. The most effective application method is therefore that which is capable of incorporating Nimitz® throughout this zone at the required use rate for the area being treated.

The application options for Nimitz® have been developed to accommodate preferred grower practice – which usually takes into account soil type, machinery available and irrigation method among other factors.

All application methods have been thoroughly tested and proven to be effective. However, when performed correctly, broadcast application followed by incorporation and bed-shaping - which pulls much of the treated soil into the raised bed is perhaps the most effective means of ensuring that Nimitz® is distributed where it should be.

Does the Nimitz® stay in this area indefinitely? How long does it work for and what is its half-life in the soil?

Nimitz® has a half-life of 7-17 days in soil, so it does its job and moves on. This relatively short half-life is one reason why fluensulfone is ecologically friendly.

How do I calculate the amount of Nimitz® to be applied via Broadcast Application?

When a broadcast application is made, and beds are formed after incorporation, the rate applied should be reduced by the percentage of the area between beds. For example:

80 cm bed-top on 180 cm centres = 80/180 = 44 percent X 8 L/ha rate = 3.6 L/ha broadcast

100 cm bed-top on 200 cm centres = 100/200 = 50 percent X 8 L/ha rate = 4 L/ha broadcast

When incorporated correctly, the broadcast method gives the most accurate Nimitz® application rate for efficiency and reduces overexposure to the developing transplant. The 'treated area' used to calculate the applied rate is always less than the actual planted area due to the untreated inter-row.

How do I calculate the amount of Nimitz® required when using Drip Application?

Initial soil moisture must be at a level to allow the product to move uniformly from shoulder to shoulder and throughout the bed as it is being drip irrigated.

The calculation of rate for drip application is based on knowledge of irrigation efficiency/coverage of each drip system in a specific soil type. If a drip system is able to wet a bed "shoulder to shoulder," then the same fractional formula described above for band application is to be used (calculate percent area treated using percentage surface area of the bed top). The drip-injection rate per hectare would be calculated based upon the bed width. If the irrigation does not wet the whole bed, calculation should be made according to the wet front width.

What if it rains after I have applied Nimitz® as a broadcast spray? Do I still need to mechanically incorporate it?

For optimal performance, all applications must be incorporated by water and/or mechanical means to a depth of 15 to 20 cm.

Soil moisture must be adequate for uniform mechanical incorporation and to support plant growth. While the amount of moisture will vary with soil type, irrigation or rainfall of 20-25 mm 1-5 days after application will increase movement of Nimitz® in the soil, thus increasing efficacy and crop safety.

Heavy rain that moves Nimitz® through the soil profile too quickly, or washes it away from the bed will reduce the efficacy of the application. Do not apply if heavy rainfall is expected within 48 hours.

When is the preferred application timing? Is it possible to apply too early – too far ahead of the planting process?

Trials have shown no significant difference in nematode control between applications of Nimitz® at 7 Days, 14 Days and 28 Days before transplanting. The interval of 7 days prior to transplanting has been chosen to allow time for adequate incorporation through the bed, sufficient time for Nimitz® to effectively treat the nematodes prior to introducing the seedlings and a safety buffer to eliminate any risk of seedling damage.

How quickly do I need to incorporate Nimitz® after broadcast or banded application to ensure that its nematicidal activity is not compromised?

Incorporation is best done immediately to ensure no lost efficacy. Individual circumstances will vary, but Nimitz® has been left for up to 5 days after application without significant loss in nematode control.

Which varieties of Tomatoes, Capsicums and cucurbits has Nimitz® been tested on and proven to be safe? Which varieties, if any, have shown unacceptable levels of damage?

ALL varieties of crops tested in ALL of the growing regions here in Australia have shown NO signs of phytotoxicity even when Nimitz® was applied at double label rates (16 L/ha).

Tomato varieties tested include: cv 3002 (Buronga NSW), cv 3402 (Mildura VIC), cv Ivanhoe (Bundaberg QLD), cv Tiny Tim (Bundaberg QLD), cv Lava (Bundaberg QLD), cv Pinnacle (Bowen QLD), cv Pinnacle (Bundaberg QLD), cv Pinnacle (Alloway QLD), cv Pinnacle (Farnsfield QLD), cv Red Luck (Bowen QLD), cv Danika (Tenterfield NSW), cv Danika (Bundaberg QLD), cv Horsepower (Mildura VIC)

Capsicum varieties tested include: cv Husky (Bundaberg QLD), cv Merlin (Bundaberg QLD), cv Plato (Stanthorpe QLD), cv Plato (Bundaberg QLD), cv Plato (Mildura VIC), cv Warlock (Stanthorpe QLD), cv

Warlock (Bundaberg QLD), cv Aquarius (Mildura VIC), cv Ducati (Bundaberg QLD), cv Ducati (Mildura VIC), cv Wizard (Bundaberg QLD)

Pumpkin varieties tested include: cv Ken's Special Hybrid 864 F1 (Mildura VIC), cv Butternut large (Gunnedah NSW), cv Jap Improved (Stanthorpe QLD), cv Jap Improved (Gunnedah NSW), cv Queensland Blue (Gunnedah NSW)

Squash varieties tested include: cv Sunburst (Stanthorpe QLD), cv Sunburst F1 (Mildura VIC)

Zucchini varieties tested: cv Eva (Bundaberg QLD), cv Regal Black (Bundaberg QLD), cv Regal Black (Peats Ridge NSW), cv Nitro (Mildura VIC)

Rockmelon varieties tested: cv Eastern Star (Bowen QLD), cv Northern Sky (Bundaberg QLD), cv Northern Star (Farnsfield QLD), cv Argyle (Gunnedah NSW), cv Nepean (Gunnedah NSW), cv Sweetlife (Gunnedah NSW), cv Planter's Jumbo (Stanthorpe QLD)

Honeydew Melon varieties tested include: cv Casper (Bowen QLD), cv Casper (Bundaberg QLD), cv Sweet Delight (Bundaberg QLD), cv Beethoven (Gunnedah NSW), cv Catalina (Gunnedah NSW), cv Ivory Star (Gunnedah NSW), cv Glacier (Bundaberg QLD)

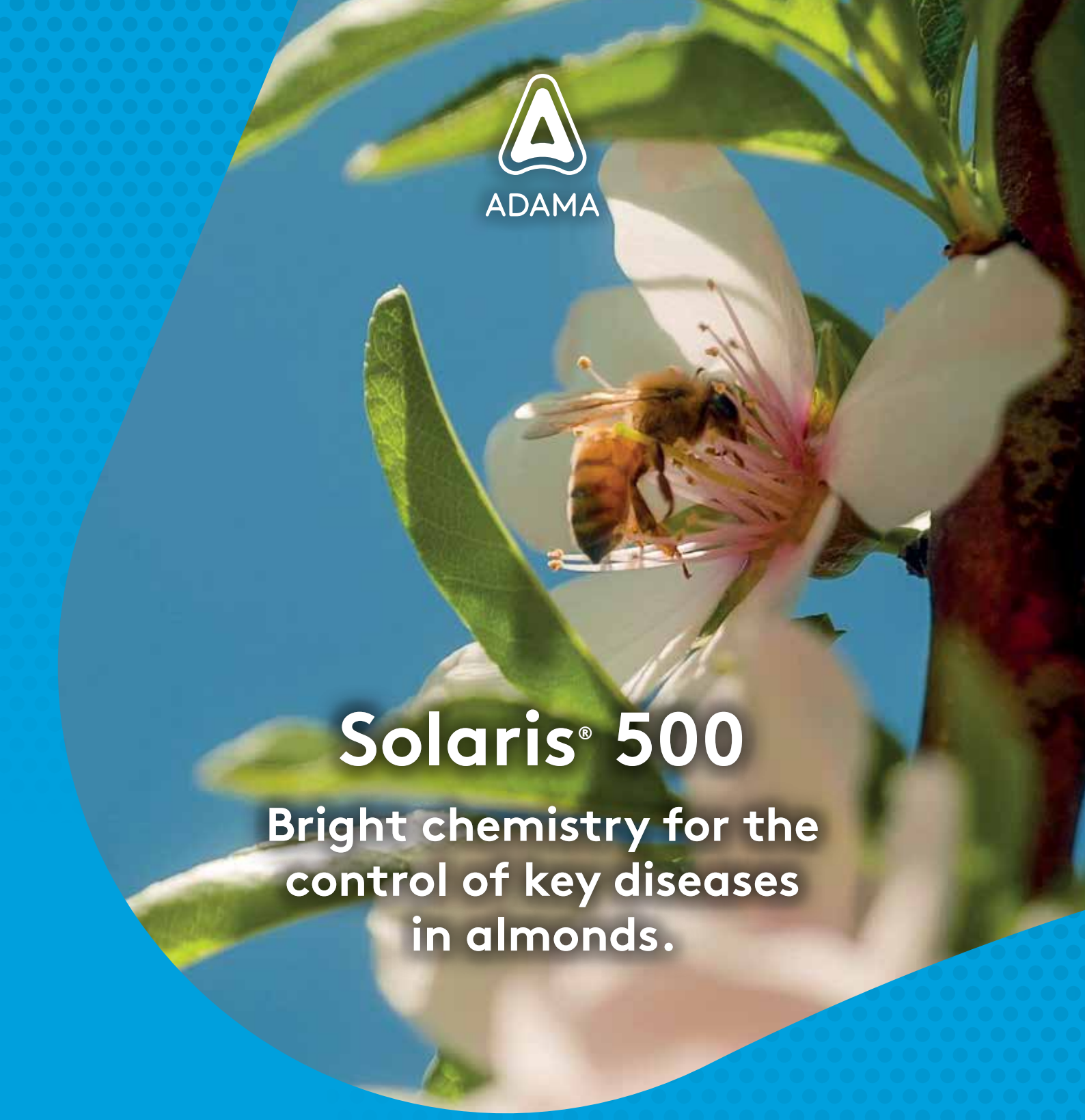
Watermelon varieties tested include: cv Minipol (Bundaberg QLD), cv Red Tiger (Bundaberg QLD), cv Storm (Bundaberg QLD), cv Nightshade (Bundaberg QLD)

Cucumber varieties tested: cv Burpless Tasty Green (Gunnedah NSW), cv Camelot (Gunnedah NSW), cv Crystal Salad (Gunnedah NSW)

Sweet Potato varieties tested:
cv. Beauregard (Bundaberg QLD)

Sugarcane varieties tested:
Q181 (Ballina, Oakenden QLD), Q158 (McKay QLD), Q208 (Burnett Heads QLD)

Since no varieties have yet shown adverse effects, even at 2X maximum label rates, and with many varieties tolerating up to 4X max label rates, we are confident that there will be few if any varieties that show ill-effects from Nimitz® when used according to the label directions.



ADAMA

Solaris® 500

Bright chemistry for the control of key diseases in almonds.

Solaris® 500* fungicide provides an alternative mode of action for the effective and economical control of key diseases in almonds.

*Subject to APVMA approval

- The only Group 9 fungicide registered for use in almonds - ideal for resistance management
- Highly effective control of blossom blight/brown rot, rust and shot hole
- Outstanding performance under wet conditions or high disease pressure
- Low impact on beneficial insects, including bees
- Easy-to-use high load concentrate

Scan here for more information

FUNGICIDE

ADAMA.COM

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Venturi® MAX

Insecticide

Product overview

Venturi® MAX is a concentrated SC formulation containing 480 g/L of methoxyfenozide. It is an effective lepidoptera insecticide registered for use in various fruit, nut and vine crops. It is ideal for use with IPM programs.

Key features

- Double strength formulation for ease of handling
- Broadest label claims for methoxyfenozide
- Highly effective against eggs and larvae
- Residual activity of up to 21 days
- IPM compatible with low impact on beneficial insects, including bees and common lepidopteran predators and parasitoids
- Alternative mode of action to reduce the risk of insecticide resistance
- Compatible with a wide range of products

Crop	Pest	Venturi® MAX rate and adjuvant recommendation
Almonds	Carob moth (1st and 2nd generation)	40 mL/100 L + wetter
Apples and pears, blueberry, grapevines, kiwifruit, persimmons	Light brown apple moth	12.5 mL/100 L
Apples and pears	Loopers	
Avocado, coffee	Avocado leafroller	
Custard apple, persimmons	Yellow peach moth	
Macadamia	Macadamia flower caterpillar	
Citrus	Light brown apple moth	12.5 mL/100 L + wetting agent at 10 mL/100 L
Macadamia, longan, lychee	Macadamia nut borer	20 mL/100 L
Tomatoes, peppers (capsicum and chilli), eggplant and okra	Native budworm, Tomato grub, Cluster caterpillar	63–85 mL/100 L or 625–850 mL/ha

Product information

Active ingredient:
480g/L methoxyfenozide

Mode of action:
Group 18 insect growth regulator

Formulation:
Suspension Concentrate (SC)

Registered crops:
Almond, apples and pears, avocado, blueberries, capsicum, chilli, citrus, coffee, custard apple, eggplant, grapevines, kiwifruit, longan, lychee, macadamia, okra, persimmon and tomato.

Application information

Adjuvant:
Where recommended apply with Agral® Spray Adjuvant, Wetter 1000 or equivalent

Incompatible with mineral oils

Rainfast:
Once spray is dry (observing the 6 hour run-off restraint)

Ground:
Concentrate or dilute spraying with sufficient water to ensure adequate coverage

Air:
DO NOT apply by air

Venturi® MAX

Withholding periods

Harvest:

Almond, blueberry and persimmons:
DO NOT harvest for 7 days after application

Avocado, coffee, custard apple, kiwifruit, lychee and pome fruit:
DO NOT harvest for 14 days after application

Citrus fruits:
DO NOT harvest for 1 day after application

Grapes (for domestic consumption):
DO NOT harvest for 21 days after application

Grapes (for export or wine production):
Consult your winery, industry spray diary^ or peak industry body for the recommended withholding period (export harvest interval) to meet export residue requirements.

^AWRI Dog Book guideline for methoxyfenozide is "Use no later than 80% capfall". Refer to current/ online version.

Longan:
DO NOT harvest for 3 days after application

Macadamia:
DO NOT harvest for 28 days after application

Tomato, peppers (capsicum and chilli), eggplant and okra:
Not required when used as directed

Grazing:

All Crops:
DO NOT graze treated crops

DO NOT allow livestock to graze within treated orchards, plantations or vineyards.

Compatibility

Venturi MAX is physically compatible with a range of fungicides and insecticides. The following products have been tested to be compatible at common label rates: Custodia® Forte, Cavalry® Weatherguard, Kocide* Blue, Mancozeb, Tri Base Blue*, Filan*, Fontelis*, Cabrio*, Trivor®, Sorcerer ® 36, Transform*, Movento*, Paramite* and Success* Neo. As formulations of other manufacturers' products are beyond the control of ADAMA Australia, all mixtures should be tested prior to mixing commercial quantities. Venturi MAX is not compatible with mineral oils.

Scan here for more information

Notes

ADAMA

Notes

Notes

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Suspension Concentrate (SC) Mixing Guide

1. PRE-CHECKS

Refer to the COMPATIBILITY section of the Product Label (and separate Product Physical compatibility guide if available) and tank mix sequence guide at adama.com in addition to tank-mix partner Product Labels before use.

Observe warnings or avoid potentially problematic tank-mix partners unless information supports usage.

Ensure main/primary and inline filters are no finer than 80 mesh but ideally use no finer than 50 mesh. Over filtering may cause spray line blockages.

This is a Suspension Concentrate (SC) formulation- SHAKE/AGITATE product thoroughly prior to use.

VENTURI SYSTEMS/CHEMICAL HOPPERS

If using a chemical handler system, ensure only one product is added per fill of the handler, then add to the spray tank.

Do not add large proportions of individual tank mix products to small volumes of water (ie be careful adding through Venturi systems that utilise a stream of water to transfer product to the primary spray tank, or chemical hoppers) - large volumes of chemical in a proportionally small volume of water can result in significant tank-mixing issues (possibly incompatibility issues), and filter blockages.

2. MIXING

1. Fill Spray Tank to minimum 70% capacity with clean water.
2. Commence agitation.

   If adding crystalline Ammonium Sulphate, add in slowly and allow **10 - 15 minutes** for granules to dissolve and fully disperse through the spray solution, or alternatively use liquid Ammonium Sulphate.
3. Add the first recommended tank-mix product as per the tank mix sequence guide SLOWLY and ensure this product is fully dissolved or dispersed through the tank prior to repeating this process for subsequent tank-mix partners.

   Many incompatibility issues and mixing problems are caused by:

   - Adding tank mix products too quickly (ie dumping them into the spray tank),
   - Pre-mixing in insufficient water in the primary tank or Venturi systems or Chemical Hoppers,
   - Mixing tank-mix partners together, or
   - Rushing this mixing process. TAKE YOUR TIME.
4. Once all herbicide addition is complete, fill tank water volume to capacity.
5. Check primary/inline filters and clean if required.
6. Maintain agitation during transit and application.
7. **Check primary/inline filters between tank-loads and clean out if required prior to the next tank- load.**
8. DO NOT let mix sit with no agitation.

ADAMA Spray drift and Tank mix table

Spray Drift Awareness

1	What product am I spraying? Could it harm sensitive crops?
2	Night time spraying is extremely high risk for spray drift.
3	Is there an inversion? Know the signs.
4	Use a very coarse droplet or greater. Check your nozzles and pressure!
5	Keep Boom Low and Travel Slow.
6	Wind speed and direction?
7	Continuously monitor conditions.
8	Stop if something is not right!

Correct Mixing Order

Step 1	**Fill the spray tank to at least 70% full.** Commence agitation
Step 2	Add any water conditioners Ammonium Sulphate or LI 700*
Step 3	Add any Wettable powders **(WP)** e.g. Axiom® Plus
Step 4	Add any Water Dispersible/Soluble Granules (**WG/WDG/DF/SG**) e.g. Brevis®
Step 5	Allow sufficient time for any granular products to completely disperse
Step 6	Add any Suspension Concentrate (SC) products e.g. Custodia® Forte
Step 7	Add any Dispersible concentrate (**DC**) products e.g. Trivor®
Step 8	Add any Suspo-emulsion (**SE**) e.g. Emulsifiable Concentrate (**EC**) products e.g. Solaris®
Step 9	Fill the spray tank to nearly full
Step 10	Add any Soluble Liquid (**SL**) products (including Aqueous Concentrate (**AC**) products)
Step 11	**Add any SL glyphosate products e.g. Wipe-Out® 450, Wipe-Out® Pro or paraquat products e.g. Spraytop®**
Step 12	Add any Oil Dispersion (**OD**) products
Step 13	Add adjuvants e.g. BS1000* and Oils e.g. Uptake* or Hasten* last and fill the tank.

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